

SHARP SERVICE MANUAL

No. SY964QTCD210/

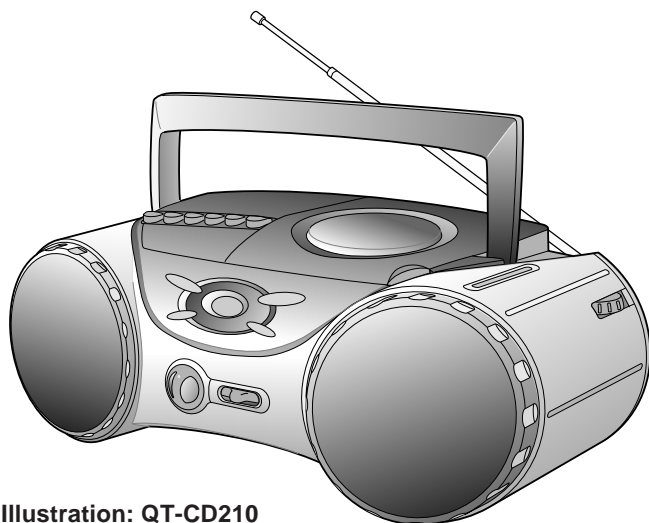


Illustration: QT-CD210

COMPACT
disc
DIGITAL AUDIO

QT-CD210(BL)
QT-CD210(S)
QT-CD210(WH)
QT-CD210C(S)

- In the interests of user-safety the set should be restored to its original condition and only parts identical to those specified should be used.

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FOR A COMPLETE DESCRIPTION OF THE OPERATION OF THIS UNIT, PLEASE REFER TO THE OPERATION MANUAL.

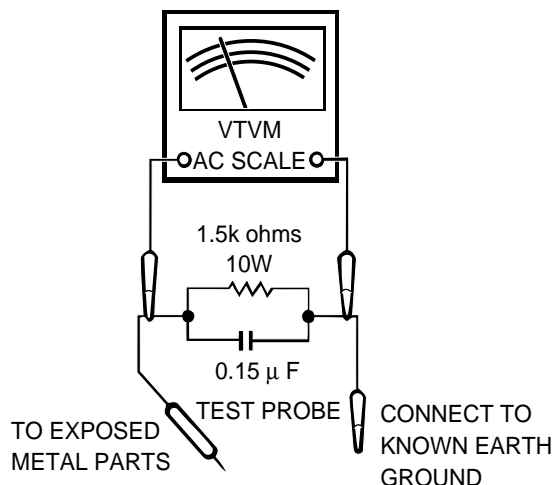
IMPORTANT SERVICE NOTES (FOR QT-CD210 ONLY)

BEFORE RETURNING THE AUDIO PRODUCT

(Fire & Shock Hazard)

Before returning the audio product to the user, perform the following safety checks.

1. Inspect all lead dress to make certain that leads are not pinched or that hardware is not lodged between the chassis and other metal parts in the audio product.
2. Inspect all protective devices such as insulating materials, cabinet, terminal board, adjustment and compartment covers or shields, mechanical insulators etc.
3. To be sure that no shock hazard exists, check for leakage current in the following manner.
 - * Plug the AC line cord directly into a 120 volt AC outlet.
 - * Using two clip leads, connect a 1.5k ohm, 10 watt resistor paralleled by a 0.15 μ F capacitor in series with all exposed metal cabinet parts and a known earth ground, such as conduit or electrical ground connected to earth ground.
 - * Use a VTVM or VOM with 1000 ohm per volt, or higher, sensitivity to measure the AC voltage drop across the resistor (See diagram).
 - * Connect the resistor connection to all exposed metal parts having a return path to the chassis (antenna, metal cabinet, screw heads, knobs and control shafts, escutcheon, etc.) and measure the AC voltage drop across the resistor.



All check must be repeated with the AC line cord plug connection reversed.

Any reading of 0.3 volt RMS (this corresponds to 0.2 milliamp. AC.) or more is excessive and indicates a potential shock hazard which must be corrected before returning the audio product to the owner.

SPECIFICATIONS

● General

Power source: AC 120 V, 60 Hz
DC 9 V ["D" size (UM/SUM-1, R20 or HP-2) battery × 6]

Power

consumption: 12 W

(For QT-CD210)

Output power: FTC; 2.0 W min. RMS per channel into 4 ohms from 150 Hz to 20 kHz, with no more than 10 % total harmonic distortion.
RMS; 2.3 W/CH
(DC operation, 10 % T.H.D.)

Speakers: 4" (10 cm) full-range speaker x 2

Dimensions: Width; 15-3/4" (400 mm)
Height; 6-1/4" (158 mm)
Depth; 8-3/8" (212 mm)

Weight: 6.0 lbs. (2.7 kg) without batteries

(For QT-CD210C)

Output power: RMS; 2.3 W/CH
(DC operation, 10 % T.H.D.)

Speakers: 10 cm (4") full-range speaker x 2

Dimensions: Width; 400 mm (15-3/4")
Height; 158 mm (6-1/4")
Depth; 212 mm (8-3/8")

Weight: 2.7 kg (6.0 lbs.) without batteries

● Compact disc player

Type: Compact disc
Signal Non-contact, 3-beam semi-conductor laser pickup
readout:
Audio channels: 2
Filter: 8-times oversampling digital filter
D/A converter: 1-bit D/A converter
Wow and flutter: Unmeasurable
(less than 0.001% W. peak)

● Radio

Frequency range: FM; 87.6 - 108 MHz
AM; 530 - 1,720 kHz

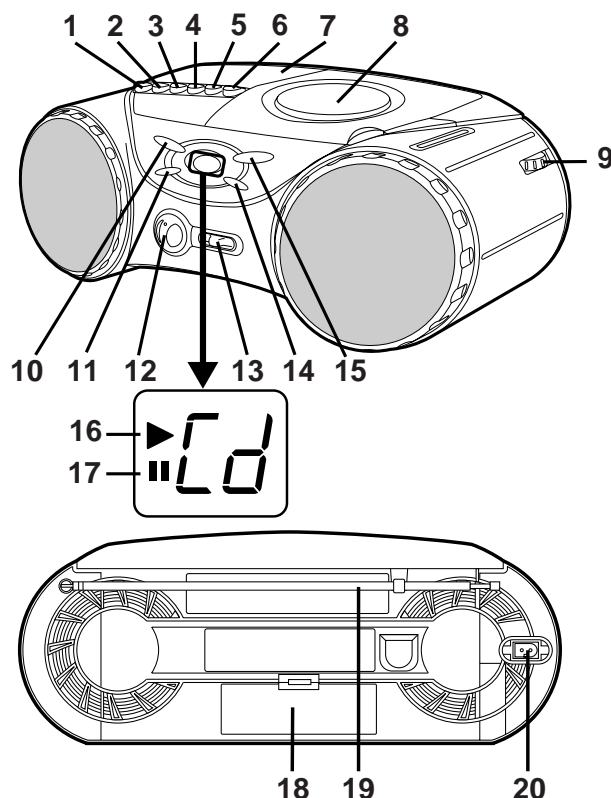
● Tape recorder

Frequency response: 50 - 14,000 Hz (Normal tape)
Signal/noise ratio: 50 dB
Wow and flutter: 0.25 % (WRMS)
Motor: DC 9 V electric governor
Bias system: AC bias
Erase system: Magnet erase

Specifications for this model are subject to change without prior notice.

NAMES OF PARTS

1. (TAPE) Record Button
2. (TAPE) Play Button
3. (TAPE) Rewind Button
4. (TAPE) Fast Forward Button
5. (TAPE) Stop/Eject Button
6. (TAPE) Pause Button
7. Cassette Compartment
8. CD Compartment
9. Tuning Control
10. (CD) Stop Button
11. (CD) Track Down/Review Button
12. Volume Control
13. Function Selector/Power Switch
14. (CD) Track Up/Cue Button
15. (CD) Play/Pause Button
16. (CD) Play Indicator
17. (CD) Pause Indicator
18. Battery Compartment
19. FM Telescopic Rod Aerial
20. AC Power Input Socket



FITTING OF DIAL POINTER

Setting method of the dial pointer

1. Remove the front cabinet. (Refer to Fig.4-1 on page 4, "Disassembly method".)
2. Remove the dial pointer.
3. Insert the dial pointer from (A) of the top cabinet so that it engages with the drum gear.
4. Fully turn the drum in the opposite direction of (B) and set it to the FL marks.
5. Reassemble the front cabinet.

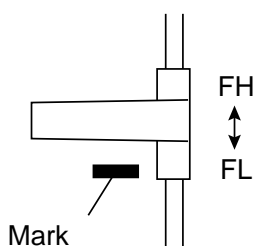
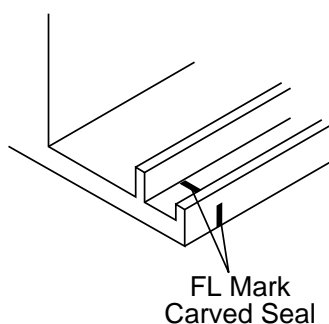


Figure 3-1

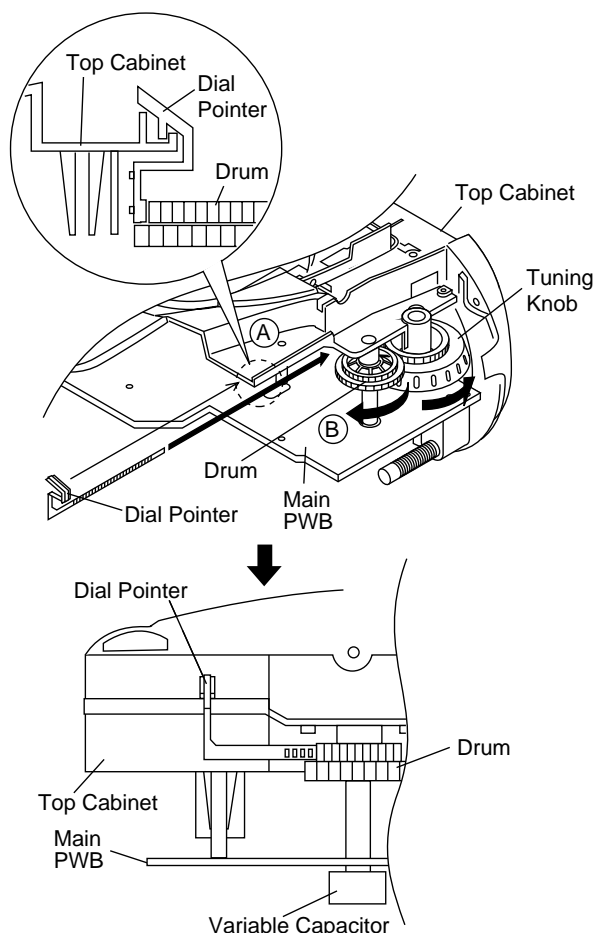


Figure 3-2

DISASSEMBLY

Caution on Disassembly

Follow the below-mentioned notes when disassembling the unit and reassembling it, to keep it safe and ensure excellent performance:

1. Take cassette tape and compact disc out of the unit.
2. Be sure to remove the power supply plug from the wall outlet before starting to disassemble the unit.
3. Take off nylon bands or wire holders where they need to be removed when disassembling the unit. After servicing the unit, be sure to rearrange the leads where they were before disassembling.
4. Take sufficient care on static electricity of integrated circuits and other circuits when servicing.

STEP	REMOVAL	PROCEDURE	FIGURE
1	Top Cabinet/ Front Cabinet	1. Screw (A1) x7 2. Socket (A2) x1	4-1
2	Power PWB	1. Screw (B1) x2 2. Hook (B2) x2 3. Socket (B3) x1 4. Hook (B4) x2	4-2
3	Main PWB/ CD Control PWB (Note)	1. Socket (C1) x1 2. Screw (C2) x7 3. Screw (C3) x1 4. Solder (C4) x3 5. Socket (C5) x3 6. Screw (C6) x2	4-2 4-3
4	CD Mechanism	1. Screw (D1) x3	4-3
5	Tape Mechanism	1. Screw (E1) x4	4-3

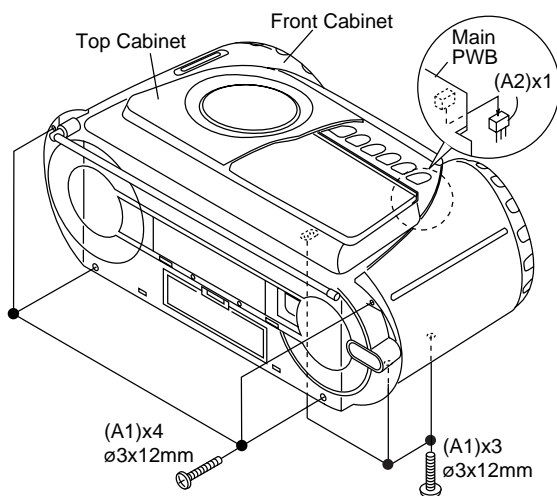


Figure 4-1

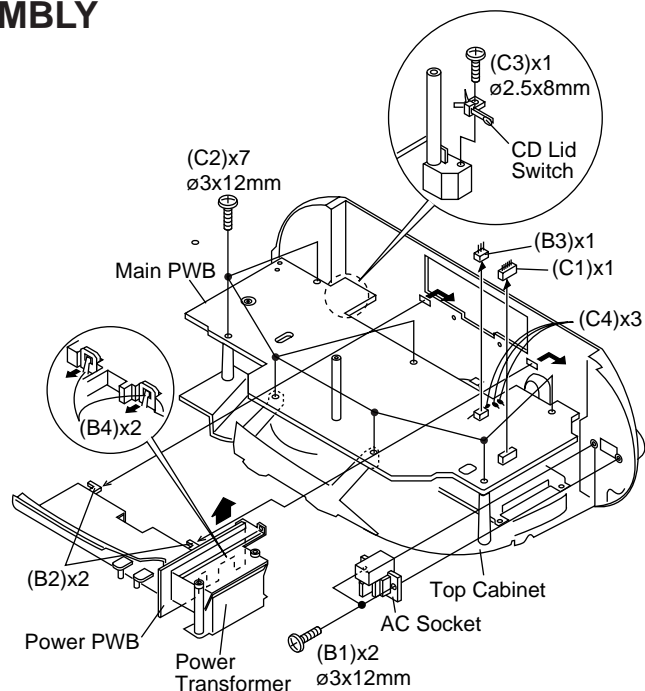


Figure 4-2

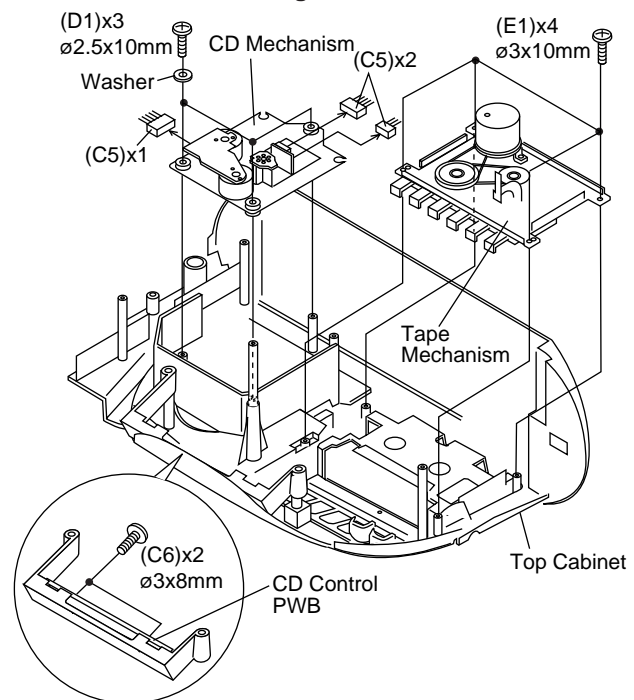


Figure 4-3

REMOVING AND REINSTALLING THE MAIN PARTS

CD MECHANISM SECTION

Perform steps 1 to 4 of the disassembly method to remove the CD mechanism.

How to remove the pickup (See Fig. 4-4.)

1. Remove the screws (A1) x 2 pcs., to remove the shaft (A2) x1 pc.
2. Remove the stop washer (A3) x1 pc., to remove the gear (A4) x1 pc.
3. Remove the pickup.

Note : (Figure 4-3 and Figure 4-4)

After removing the connector for the optical pickup from the connector, wrap the conductive aluminium foil around the front end of connector to protect the optical pickup from electrostatic damage.

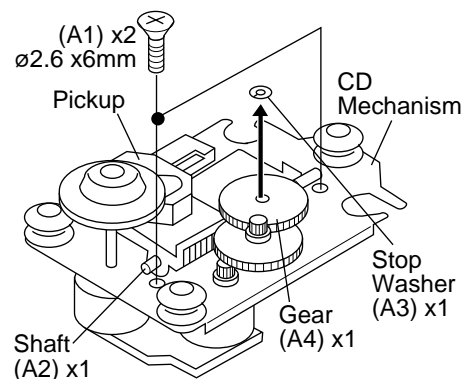


Figure 4-4

TAPE MECHANISM SECTION

Perform steps 1 to 5 of the disassembly method to remove the tape mechanism. (See page 4.)

How to remove the record / playback and erase heads (See Fig. 5-1.)

1. Remove the screws (A1) x 2 pcs., to remove the record/playback head.
2. Remove the hooks (A2) x 2 pcs., toward the center position as shown in Fig. 5-1. and then extract the erase head upward.

Note:

After replacing the heads and performing the azimuth adjustment, be sure to apply screwlock.

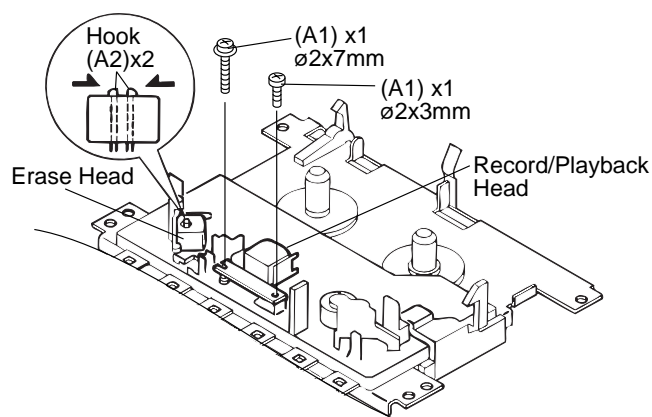


Figure 5-1

How to remove the pinch roller (See Fig. 5-2.)

1. Carefully bend the pinch roller pawl in the direction of the arrow <A>, and remove the pinch roller (B1) upwards.

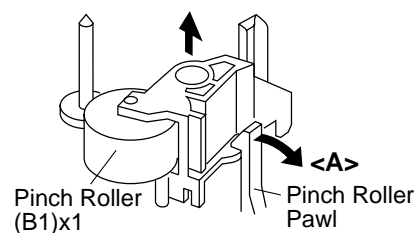


Figure 5-2

How to remove the belts (See Fig. 5-3.)

1. Remove the main belt (C1) x 1 pc., from the motor pulley.
2. Remove the FF/REW belt (C2) x 1 pc., from the REW/FF roller.
3. Put on the belts in the reverse order of removal.

Note:

When putting on the belt, ascertain that the belt is not twisted, and clean it.

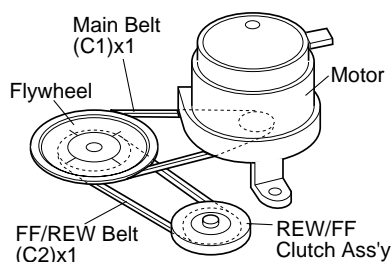


Figure 5-3

How to remove the motor (See Figs. 5-4.)

1. Remove the mainbelt.
2. Remove the screw (D1) x 1 pc., to remove the motor mount.
3. Remove the screws (D2) x 2 pcs., to remove the motor.

Note:

When mounting the motor, pay attention to the motor mounting angle.

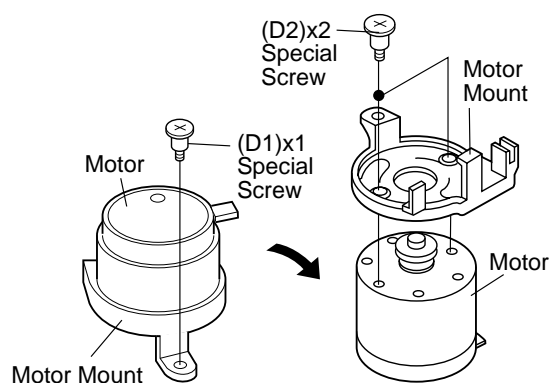


Figure 5-4

How to remove the flywheel (See Fig. 5-5.)

1. Remove the belt.
2. Remove the stop washer (E1) x 1 pc., with a small precision screwdriver to extract the flywheel from the capstan metal.

Note:

When the stop washer is deformed or damaged, replace it with a new one.

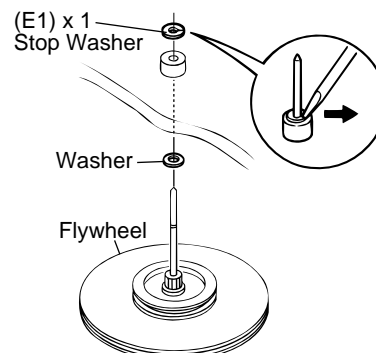


Figure 5-5

How to reinstall the parts

Install each part in the reverse order of the removal with care.

ADJUSTMENT

MECHANISM SECTION

• Driving Force Check

Torque Meter	Specified Value
PLAY: TW-2412	Over 120 g

• Torque Check

Torque Meter	Specified Value
Play: TW-2111	25 to 65 g.cm
Fast Forward: TW-2231	60 to 130 g.cm
Rewind: TW-2231	60 to 130 g.cm

• Head Azimuth

Torque Meter	Specified Value
MTT-114	Output: Speaker Terminal (CNP201 Load resistance: 4 ohms)

• Tape Speed

Test Tape	Adjusting Point	Specified Value	Instrument Connection
MTT-111	Variable resistor in motor. (M601)	3,000 ± 90 Hz	Output: Speaker Terminal (CNP201 Load resistance: 4 ohms)

TAPE SECTION

Position of each switch or control	
Volume control	Max
Function switch	Tape/Power Off

• Bias Oscillation

Adjustment Point	Specified Value	Instrument Connection
L301	82 kHz ± 6 kHz	Pin 1 of CNP101

• Playback Amplifier Sensitivity Check

Test Tape	Specified Value	Instrument Connection
MTT-118	1.1 V ± 3 dB	Speaker Terminal (Load resistance: 4 ohms)

TUNER SECTION

fL: Low-range frequency
fH: High-range frequency

• FM IF/RF

Test Stage	Specified Value/Adjusting Point	Instrument Connection
FM Detection	T2	Input: Pin 1 of IC1 Output: Pin 18 of IC1
FM Band Coverage	fL: L2 fH: TC2	Input: Antenna Output: Speaker Terminal (CNP201 Load resistance: 4 ohms)
FM Tracking	fL: 88.0 MHz: L1 fH: 108.0 MHz: TC1	

• AM IF/RF

Test Stage	Specified Value/Adjusting Point	Instrument Connection
AM IF	T3	Input: Antenna Output: Pin 18 of IC1
AM Band Coverage	fL: L4 fH: TC4	Input: Antenna Output: Speaker Terminal (CNP201 Load resistance: 4 ohms)
AM Tracking	fL: 600 kHz: L3 fH: 1,400 kHz: TC3	

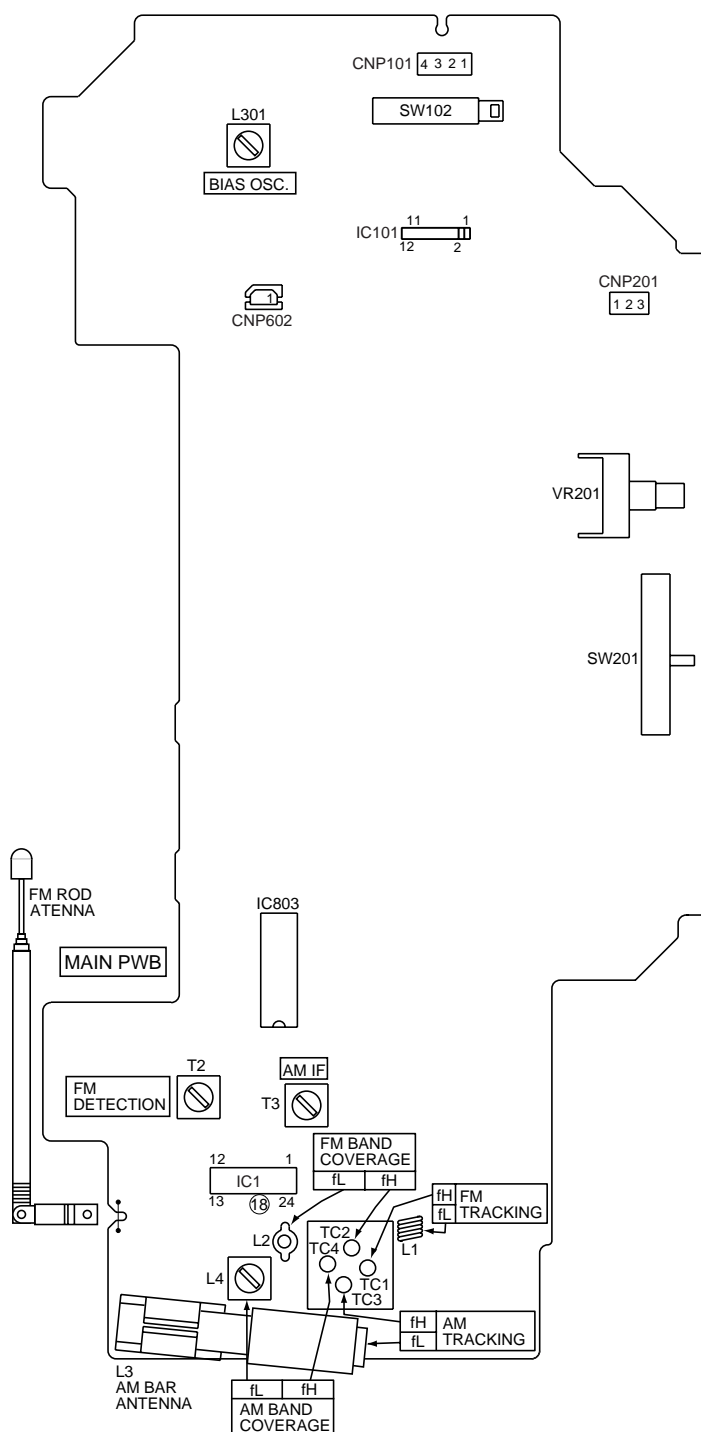


Figure 6 ADJUSTMENT POINTS

CD SECTION

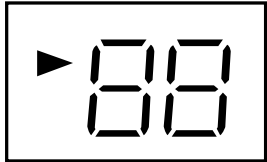
Since this CD system incorporates the following automatic adjustment function, when the pickup is replaced, it is not necessary to reajust it.

Since this CD unit does not need adjustment, the combination of PWB and laser pickup unit is not restricted.

TEST MODE

Start	While holding down the "PLAY" button, move the FUNCTION/POWER switch to "CD".	
Note	1. When the CD LID switch is in the OFF position, (CD LID is open) the unit will be able to enter the test mode. However, can use the "UP/CUE" and "DOWN/REVIEW" button only. 2. You can only move the pickup. 3. The LCD display should be the same as it is for normal CD operations.	
Operation	1	The use of the "UP/CUE" button will move the pickup to the outermost position. The use of the "DOWN/REVIEW" button will move the pickup to the innermost position.
	2	When the "PLAY" button is pressed, the laser will be lit. If the laser is lit and the "PLAY" button is pressed again, play back will start from the current pickup position . In the playback operation, the "STOP" button is pressed, the laser will be geve out and the playback is stopped.

LCD MODE

Start	After connecting of the 10kΩ resistor between IC802 ②7pin and GND and holding down the "PLAY" button, move the FUNCTION/POWER switch to "CD".	
Display		

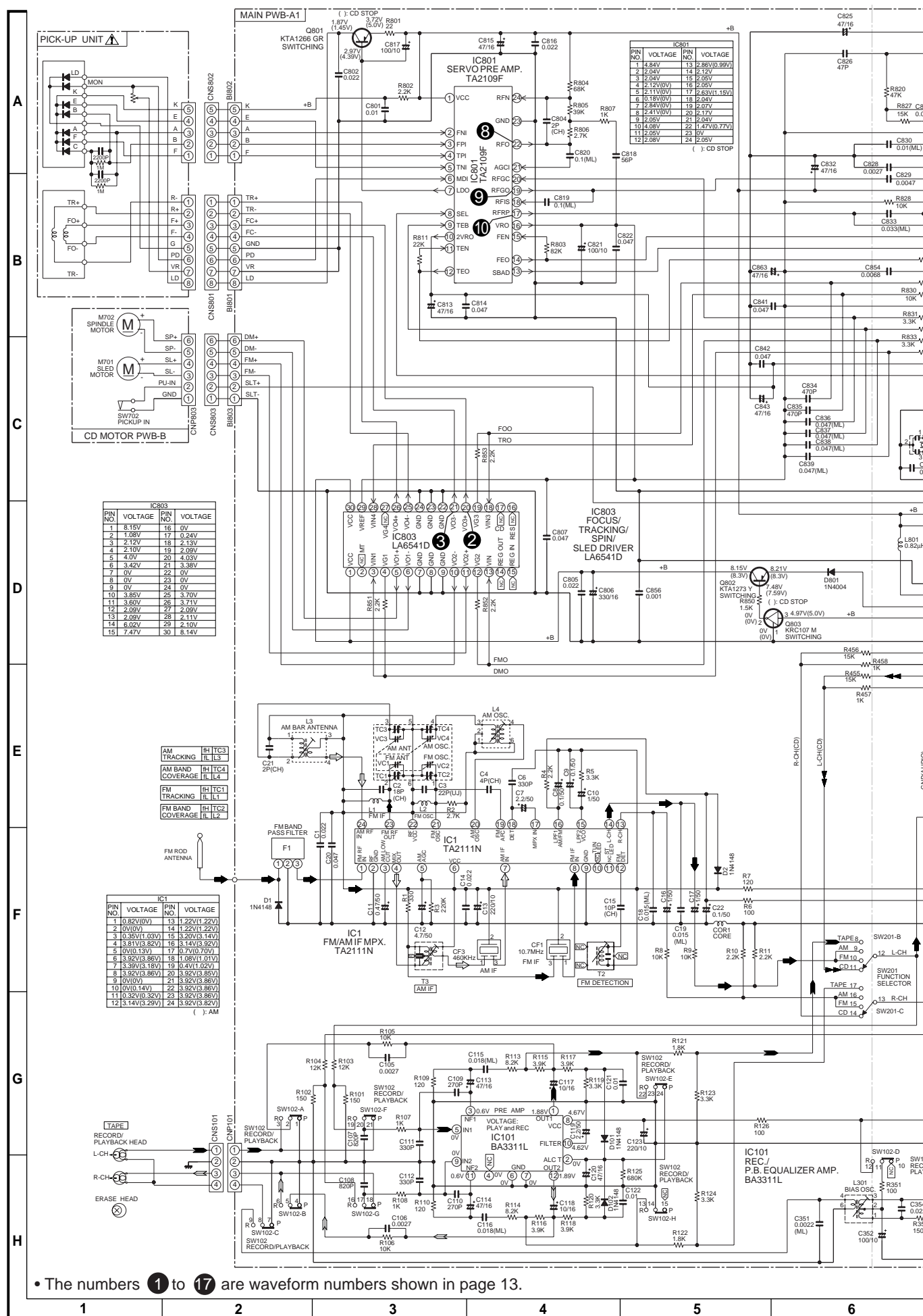
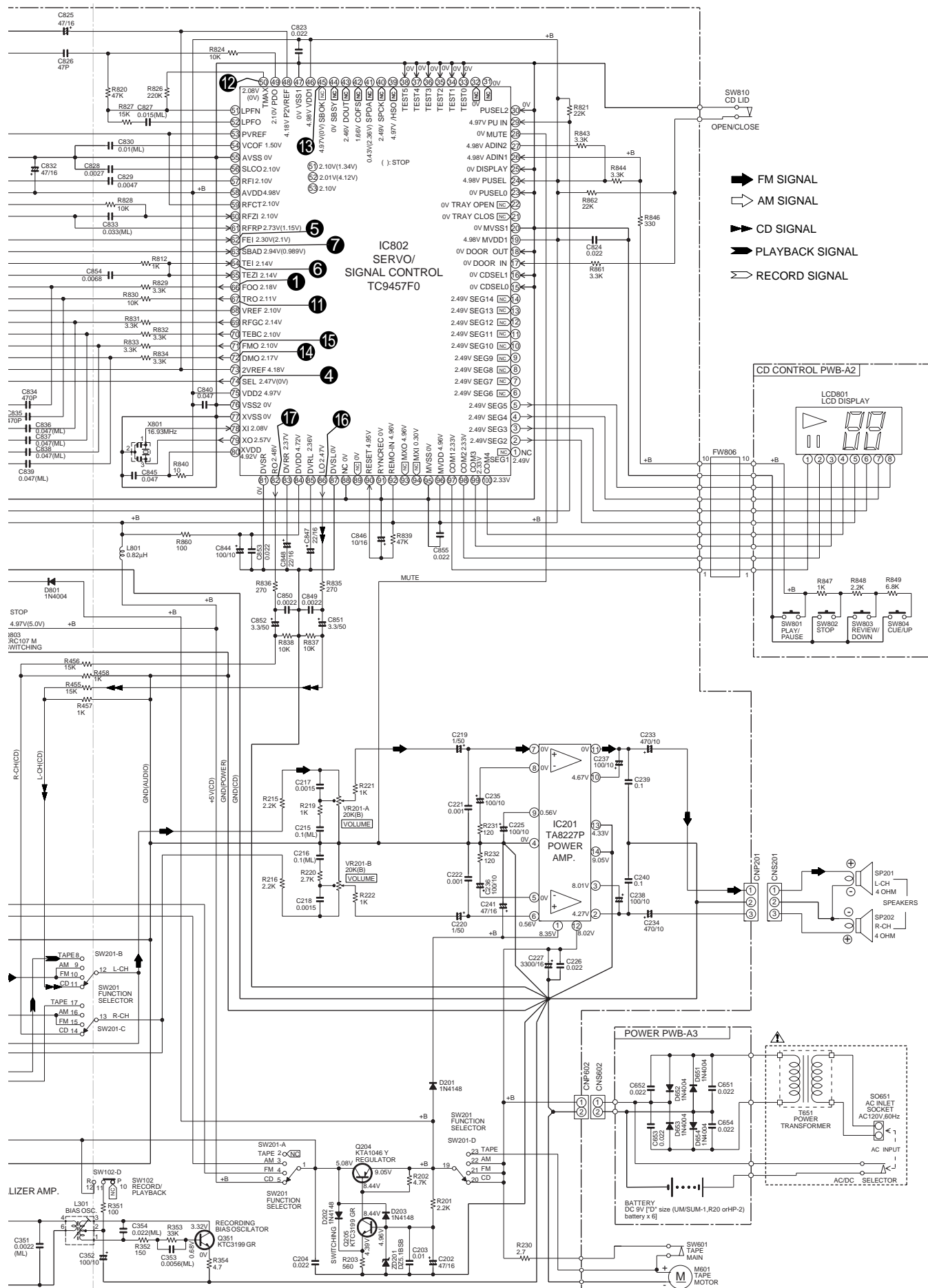


Figure 8 SCHEMATIC DIAGRAM (1/2)



• NOTES ON SCHEMATIC DIAGRAM can be found on page 12.

Figure 9 SCHEMATIC DIAGRAM (2/2)

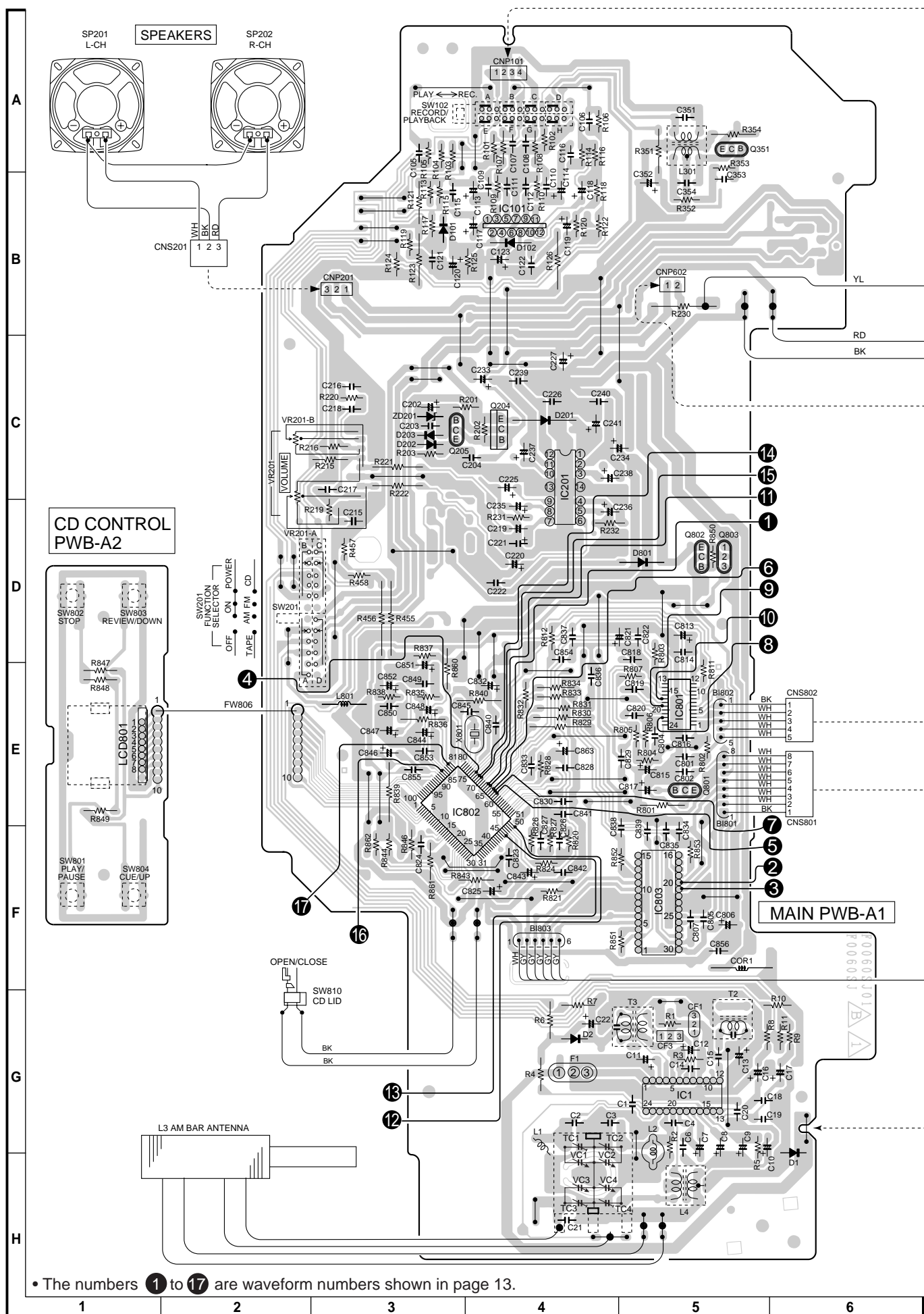


Figure 10 WIRING OF P.W.BOARD (1/2)

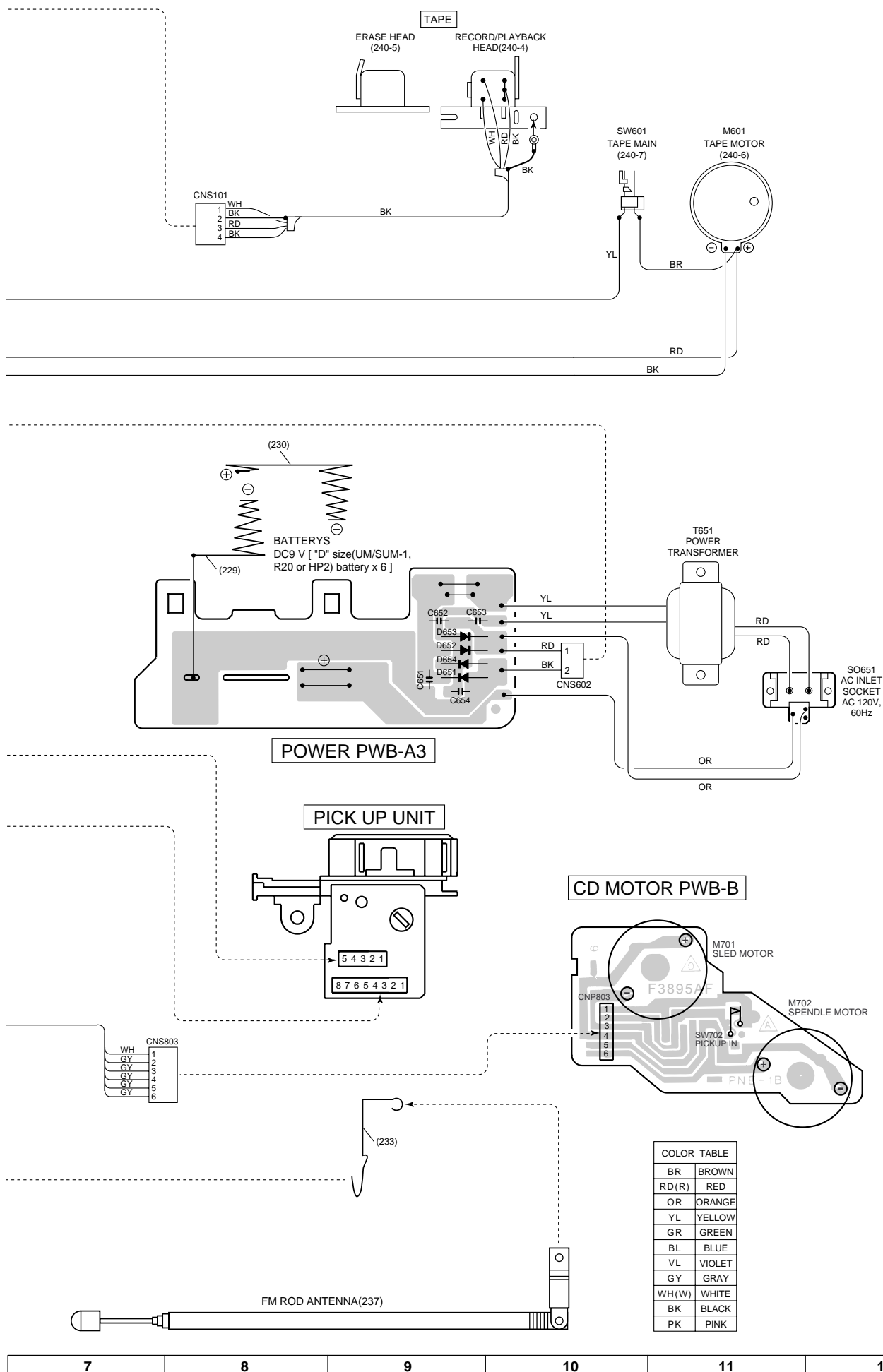



Figure 11 WIRING OF P.W.BOARD (2/2)

NOTES ON SCHEMATIC DIAGRAM

- Resistor:
To differentiate the units of resistors, the symbol as K and M are used: the symbol K means 1000 ohm and the symbol M means 1000 kohm and the resistor without any symbol is an ohm resistor. The resistor designated "Fusible" is a fuse type resistor
- Capacitor:
To indicate the unit of capacitor, a symbol P is used: this symbol P means micro-micro-farad and the unit of the capacitor without such a symbol is microfarad. As to electrolytic capacitor, the expression "capacitance/withstand voltage" is used.
(CH), (TH), (RH), (UJ): Temperature compensation
(ML): Mylar type
(P.P.): Polypropylene type
- The indicated voltage in each section is the one measured by Digital Multimeter between such a section and the chassis with no signal given.

1. Tuner
(): AM mode
Marking except for (): FM mode
 2. CD
(): Play mode
Marking except for (): Stop state
 3. Deck section
(): Record mode
Marking except for (): Playback mode
Display / Control section:
(): Active state
Marking except for (): CD Function mode at stop state
- Schematic diagram and Wiring Side of P.W.Board for this model are subject to change for improvement without prior notice.
 - Parts marked with "⚠" () are important for maintaining the safety of the set. Be sure to replace these parts with specified ones for maintaining the safety and performance of the set.

REF. NO	DESCRIPTION	POSITION
SW102	RECODE/PLAYBACK	REC— <u>P.B.</u>
SW201	FUNCTION SELECTOR	TAPE/OFF—AM/ON— FM/ON—CD/ON
SW601	TAPE MAIN	<u>OFF</u> —ON
SW702	PICKUP IN	<u>OFF</u> —ON
SW801	PLAY/PAUSE	<u>OFF</u> —ON
SW802	STOP	<u>OFF</u> —ON
SW803	REVIEW/DOWN	<u>OFF</u> —ON
SW804	CUE/UP	<u>OFF</u> —ON
SW810	CD LID	<u>OFF</u> —ON

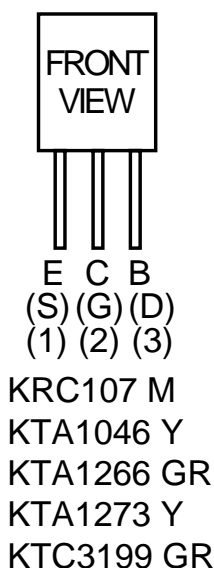
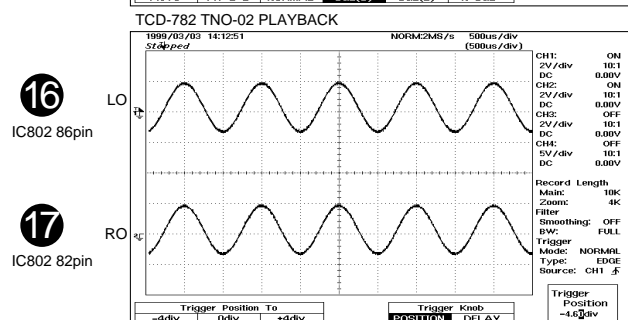
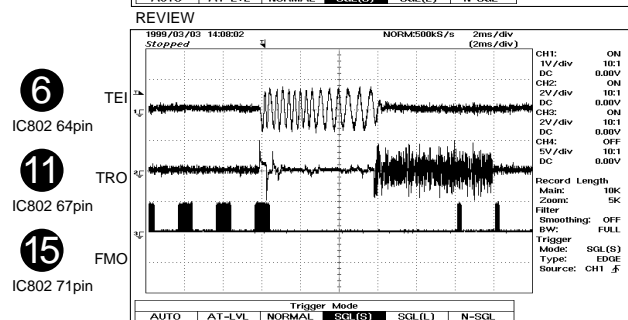
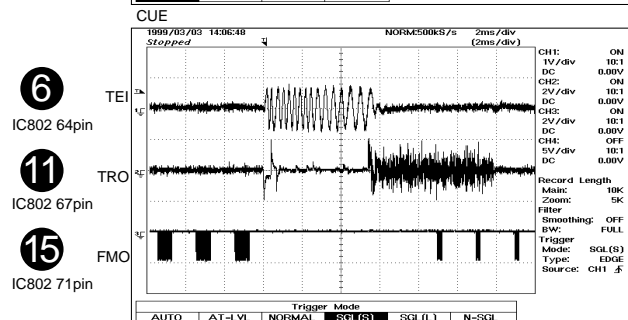
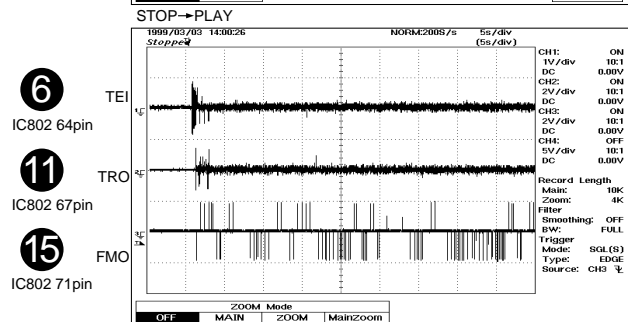
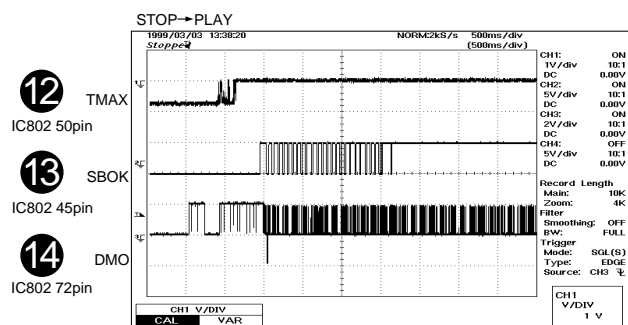
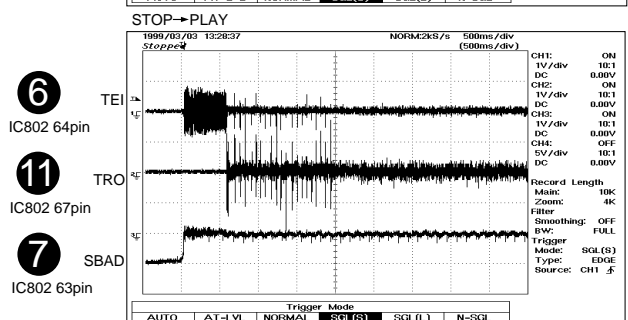
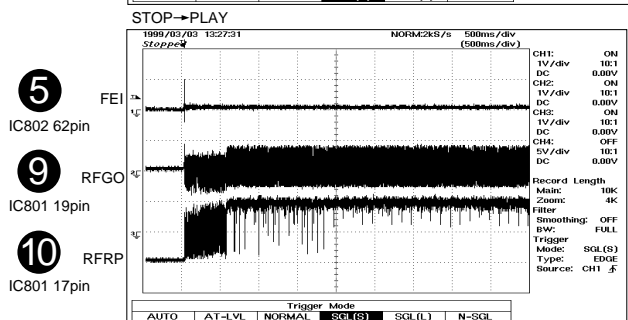
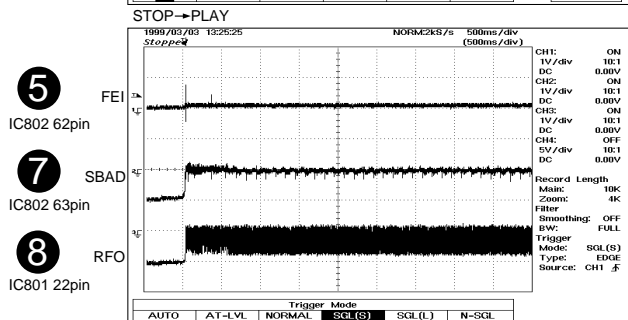
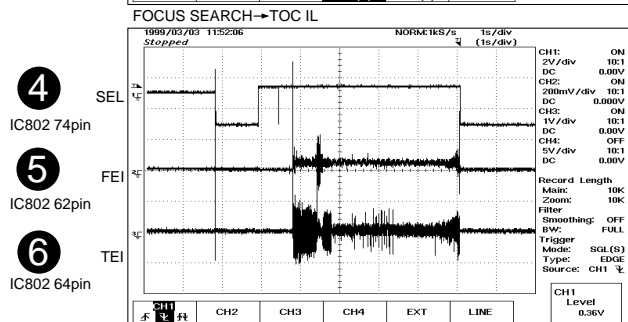
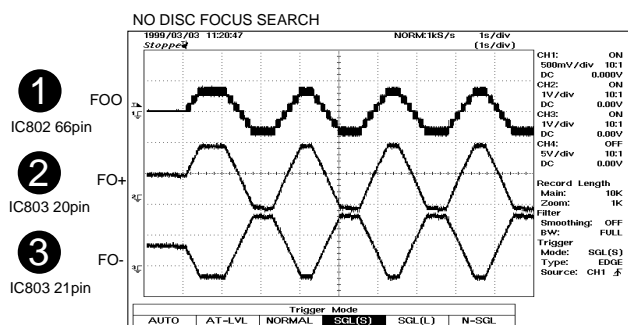


Figure 12 TYPES OF TRANSISTOR

WAVEFORMS OF CD CIRCUIT



TROUBLESHOOTING (CD SECTION)

When the CD does not function

When the CD section does not operate when the objective lens of the optical pickup is dirty, this section may not operate. Clean the objective lens, and check the playback operation. When this section does not operate even after the above step is taken, check the following items.

Remove the cabinet and follow the troubleshooting instructions.

"Track skipping and/or no TOC (Table Of Contents) may be caused by build up of dust other foreign matter on the laser pickup lens. Before attempting any adjustment make certain that the lens is clean. If not, clean it as mentioned below."

Turn the power off.

Gently clean the lens with a lens cleaning tissue and a small amount of isopropyl alcohol.

Do not touch the lens with the bare hand.

Dust gradually accumulates on the objective lens during use, and it may degrade performance.

To avoid this problem, use a cleaning disc designed for CD optical pickup lenses.

HOW TO USE

1. Using the brush in the cleaner cap, apply 1 or 2 drops of the cleaning fluid to the brush on the CD cleaner disc which has ▲ the mark next to it.

2. Place the CD cleaner disc onto the CD disc tray with the brush side down, then press the play button.

3. You will hear music for about 20 seconds and the CD player will automatically stop. If it continues to turn, press the stop button.

CAUTION

● The CD lens cleaner should be effective for 30 - 50 operations, however if the brushes become worn out earlier then please replace the cleaner disc.

● If the CD cleaner brushes become very wet then wipe off any excess fluid with a soft cloth.

● Do not drink the cleaner fluid or allow it to come in contact with the eyes. In the event of this happening then drink and / or rinse with clean water and seek medical advice.

● The CD cleaner disc must not be used on car CD player or on computer CD ROM drives.

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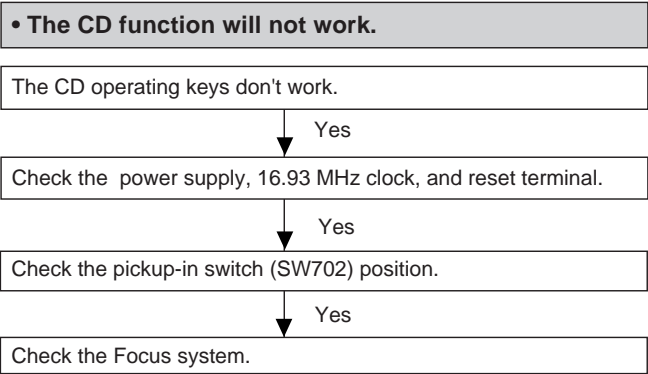
Cleaner Liquid

Cleaning Disc

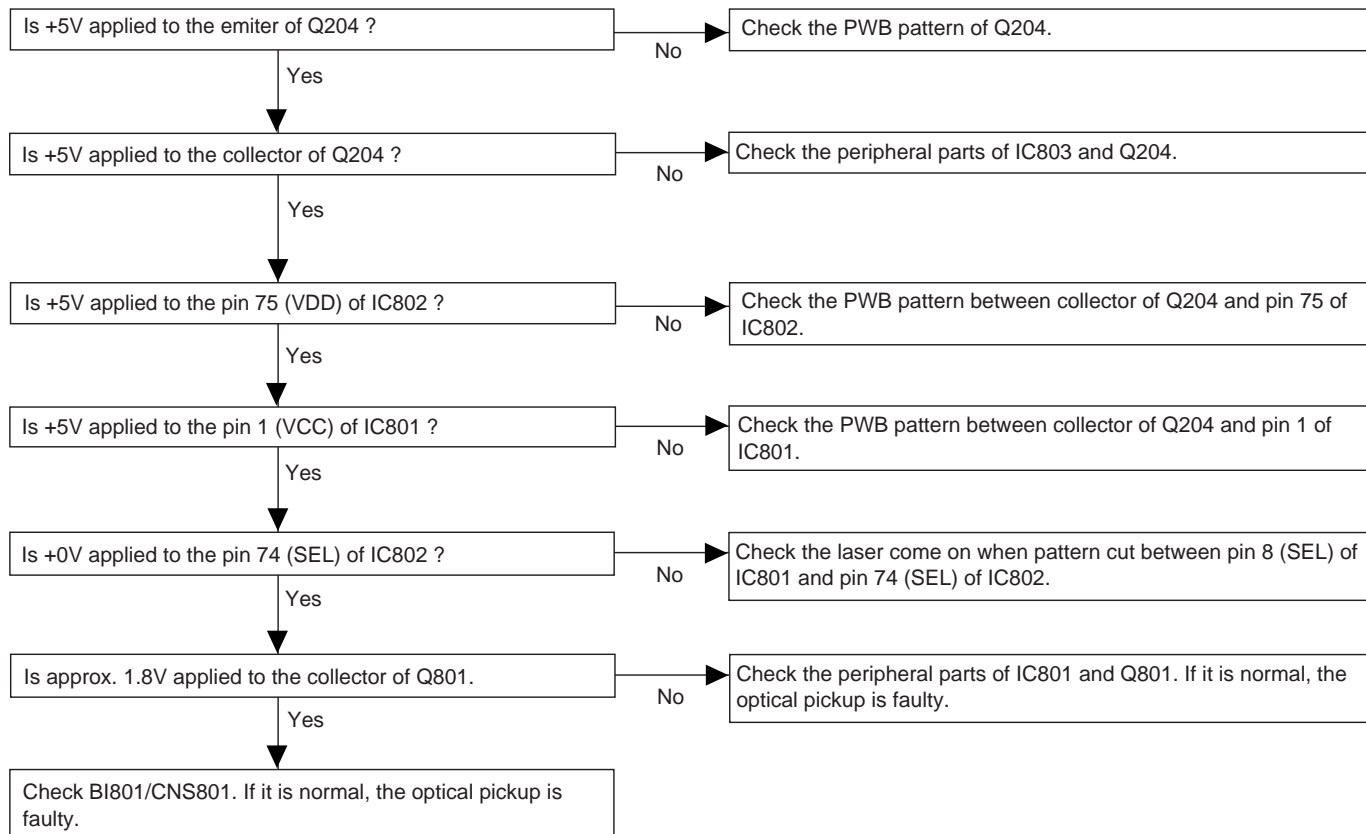
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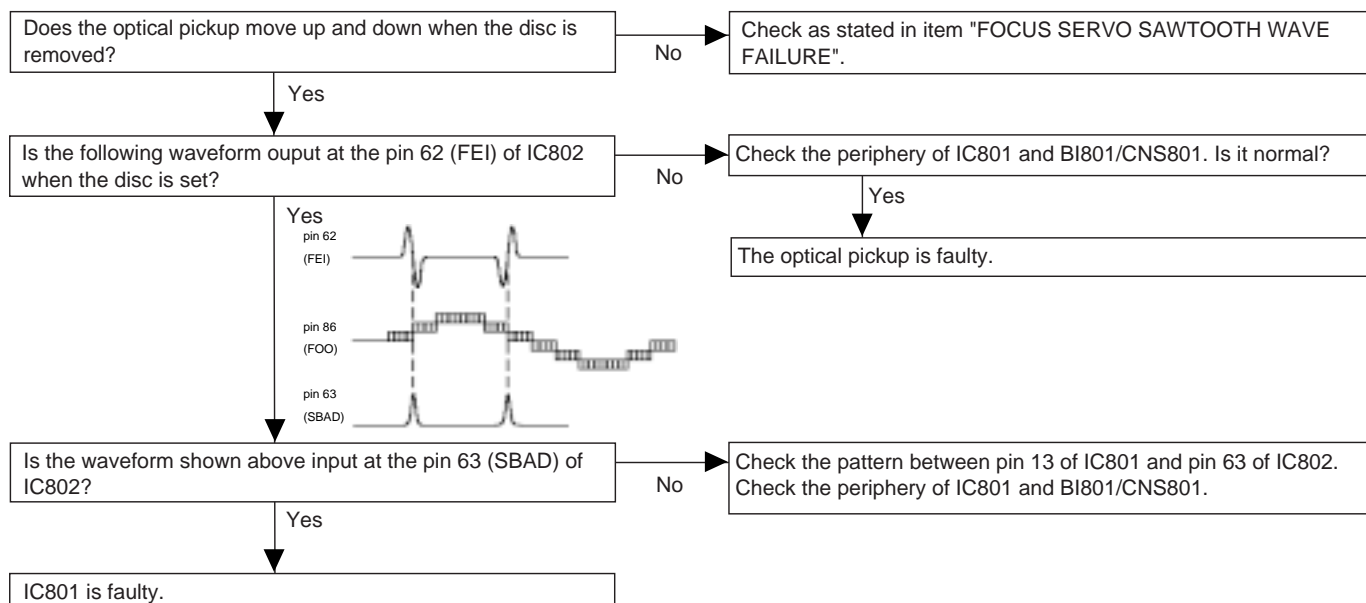
Figure 14



• **Laser failure.**

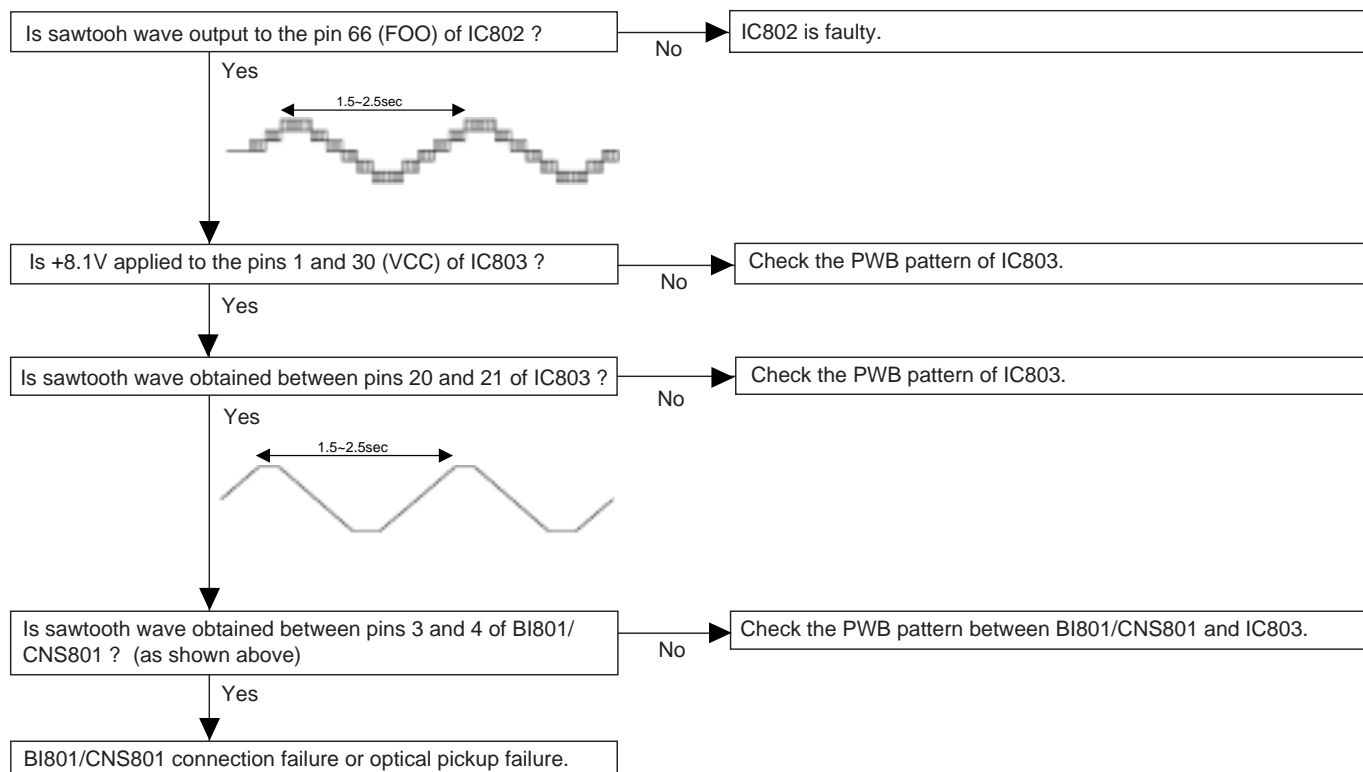


• **Focus failure.**

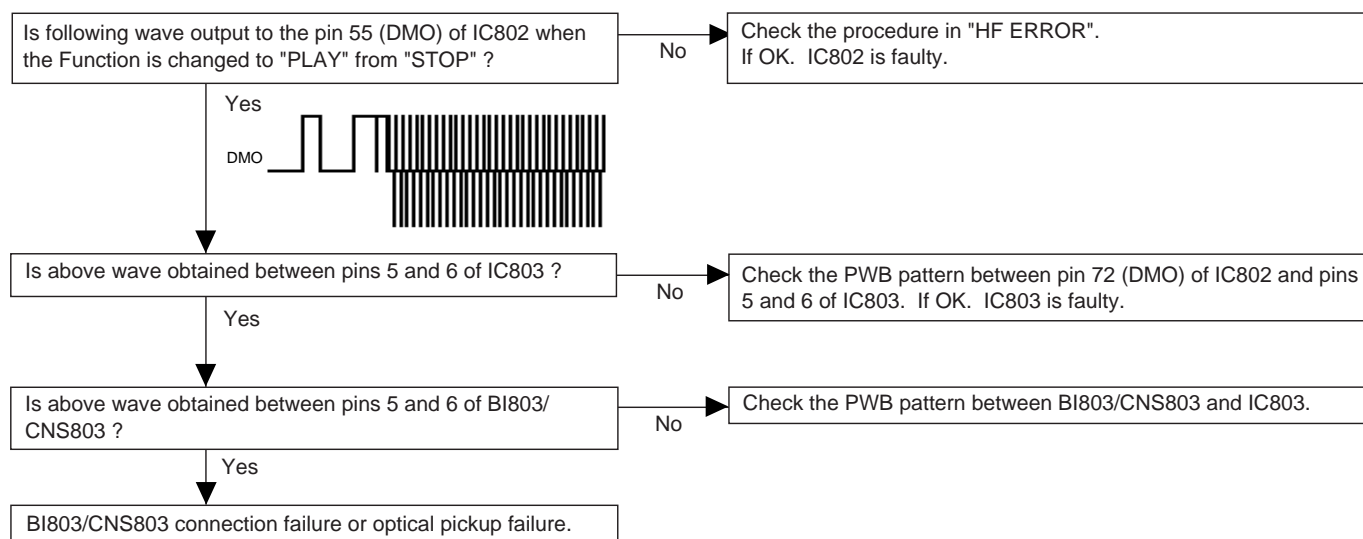


QT-CD210/C

• Focus servo sawtooth wave failure.



• Spindle motor clv servo failure.



• Track search failure

Does the sled motor run in FF/REW state when the CD TEST MODE is set?

No

Check as stated in item "SLED MOTOR OPERATION FAILURE".

Yes

Is the following wave output to the pin 67 (TRO) of IC802 during track search in normal playback?

No

IC802 failure.

Yes



Is the following wave output to the pins 12 (TEO) of IC801 during track search in normal playback?

No

Check the PWB pattern between pin 67 (TRO) of IC802 and pin 28 of IC803.
Check the PWB pattern between pins 25 and 26 of IC803 and Optical pickup.
If OK. Optical pickup failure.

Yes



Is the above wave output to the pins 64 (TEI) and 65 (TEZI) of IC802 during track search in normal playback?

No

Check the PWB pattern between pin 12 (TEO) of IC801 and pins 64 (TEI) and 65 (TEZI) of IC802. If OK. IC801 failure.

Yes

Is the following wave output to the pin 60 (RFZI) and 61 (RFRP) of IC802 during track search in normal playback?

No

Check the PWB pattern between pin 22 (RFO) and 18 (RFIS), 17 (RFRP) of IC801 and pins 60 and 61 of IC802. If OK. IC801 failure.

Yes



Normal.

• Sled motor operation failure.

Is following sled feed signal output the pin 71 (FMO) of IC802 when FF/REW key is pressed after the CD TEST MODE is set?

No

IC802 is faulty.

Yes

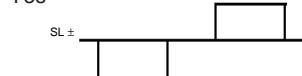


Is following sled feed signal input the pins 12 and 13 of IC803 when FF/REW key is pressed after the CD TEST MODE is set?

No

Check the PWB pattern between pin 71 of IC802 and pins 12 and 13 of IC803.

Yes



Is sled feed signal output the pins 10 and 11 of IC803?

No

Check the peripheral parts of IC803. If OK, IC803 is faulty.

Yes

Is sled feed voltage applied between both terminals of sled motor?

No

Check the BI803/CNS803.

Yes

Check the CD mechanism (periphery of sled motor).
If the sled motor does not run when DC2.0V is applied to both terminals of sled motor, the sled motor is faulty.

• Sled servo failure.

Is following sled signal output the pin 71 (FMO) of IC802 during playback?

No

IC802 is faulty.

Yes



Normal.

FUNCTION TABLE OF IC

IC802 VHiTC9457F0-1: Servo/Signal Control (TC9457F0) (1/4)

Pin No.	Port Name	Terminal Name	Input/Output	Function
1*	(OT5)S1	SEG1	Output	<p>Segment signal output to the LCD panel.</p> <p>Up to 72 segments in a matrix with COM1 to COM4 can be displayed.</p> <p>All of the S1 to S18 pins can be switched for output ports by a program.</p> <p>Also, the S15 to S18 pins each can be switched for I/O ports individually.</p> <p>When set for I/O ports, these pins become Nch open-drain output.</p> <p>Furthermore, the S11 to S14 and the P8-0 to P8-3 pins can be switched for use as CD signal (CLK to IPF) input/output pins by a program.</p> <ul style="list-style-type: none"> • CLK: Subcodes P thru W data readout clock input/output. Selected between input and output by a command. • DATA: Subcodes P thru W data output. • SFSY: Playback system frame sync signal output. • LRCK: Channel clock (44.1kHz) output. It outputs a low for L channel and a high for R channel. Polarity can be inverted by a command. • BCK : Bit clock (1.4122MHz) output. • AOUT: Audio data output. • MBOV: Buffer memory-over signal output. It outputs a high when buffer overflows. • IPF : Correction flag output. When AOUT is C2 correction output, it outputs a high indicating that correction is impossible.
2	(OT6)S2	SEG2	Output	
3	(OT7)S3	SEG3	Output	
4	(OT8)S4	SEG4	Output	
5	(OT9)S5	SEG5	Output	
6*	(OT10)S6	SEG6	Output	
7*	(OT11)S7	SEG7	Output	
8*	(OT12)S8	SEG8	Output	
9*	(OT13)S9	SEG9	Output	
10*	(OT14)S10	SEG10	Output	
11*	(CLK/OT15)S11	SEG11	Output	
12*	(DATA/OT16)S12	SEG12	Output	
13*	(SFSY/OT17)S13	SEG13	Output	
14*	(LRCK/OT18)S14	SEG14	Output	
15	(BCK/S15)P8-0	CDSEL0	Output	
16	(AOUT/S16)P8-1	CDSEL1	Output	
17	(MBOV/S17)P8-2	DOOR IN	Output	
18	(IPF/S18)P8-3	DOOR OUT	Output	
19	MVDD	MVDD1	—	<p>Power supply pins.</p> <p>Normally, apply a voltage of 4.5 to 5.5V to VDD.</p> <p>In a backup state (when the CKSTP instruction executed), the device's current consumption is reduced to 1μA or less, allowing for the supply voltage to be lowered to 2.0V.</p> <p>The device is reset and the program starts from address 0 when a voltage of 2.7V or more is applied to this pin when it is at 0V (power-on reset).</p>
20	MVSS	MVSS1	—	
21*	(K0)P1-0	TRAY CLOSE	Input	<p>4-bit CMOS I/O ports.</p> <p>These ports can be set for input or output bit for bit by a program.</p> <p>These pins can be pulled up to VDD or down to GND by program.</p> <p>Therefore, they can be used as key input pins. Also, when they are set for I/O port, a change of state in this input can be used to clear the clock stop or wait mode.</p>
22*	(K1)P1-1	TRAY OPEN	Input	
23	(K2)P1-2	PUSEL0	Input	
24	(K3)P1-3	PUSEL1	Input	
25	(DCREF)P3-0	DISPLAY	Input	<p>5-bit CMOS I/O ports.</p> <p>These ports can be set for input or output bit for bit by a program.</p> <p>The P3-0 to P4-0 pins serve dual purposes as analog inputs for the internal 6-bit 4-channel A/D converters.</p> <p>The internal A/D converters can complete conversion in 6 instruction cycles using a successive approximation method. The required pins can be set for A/D analog input bit for bit by a program. P3-0 can be set for reference voltage input, and the internal power supply (MVDD) can be used for this reference voltage.</p> <p>The P4-0 pin serves dual purposes as a buzzer output pin.</p> <p>The buzzer output can be selected from 8 frequencies, 0.625 to 3kHz.</p> <p>Each selected frequency can be output in one of four modes: continuous, single, 10Hz intermittent, and 10Hz intermittent at 1Hz interval.</p> <p>Whether or not to use and how to control the A/D converter and buzzer all can be set by a program.</p>
26	(ADin1)P3-1	ADIN1	Input	
27	(ADin2)P3-2	ADIN2	Input	
28	(ADin3)P3-3	MUTE	Input	
29	(BUZR/ADin4)P4-0	PU IN	Input	

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC802 VHiTC9457F0-1: Servo/Signal Control (TC9457F0) (2/4)

Pin No.	Port Name	Terminal Name	Input/Output	Function
30 31* 32*	(S12)P4-1 (SO/S11/ SDA)P4-2 (SCK/SCL) P4-3	PUSEL2 NC NC	Input Input/Output Input/Output	3-bit CMOS I/O ports. These ports can be set for input or output bit for bit by a program. These pins serve dual purposes as input or output pins for the serial interface circuit (SIO). The SIO is a 2-wire/3-wire compatible serial interface. 4 or 8 bits of serial data, beginning with the MSB or LSB, are serially output from the SO/SDA, pin at each clock edge on the SCK/SCL pin, and the data on S11 or S12 pin is serially input to the device. The serial clock (SCK/SCL) allows selection between the internal (450/225/150/75 kHz) and external sources and a selection of the active edge, rise or fall. Moreover, since the clock and data can be output via Nch open-drain outputs, variouts, device controls and communication between controllers can be greatly facilitated. When an SIO interrupt is enabled, an interrupt is generated at completion of SIO execution and the program jumps to address 4. All inputs to SIO contain a Schmitt trigger circuit.
33 34 35 36 37 38	TEST0 TEST1 TEST2 TEST3 TEST4 TEST5	TEST0 TEST1 TEST2 TEST3 TEST4 TEST5	Input Input Input Input Input Input	Test mode control input pins. The test mode is selected when these pins are set high and normal operation is selected when they are low.
39* 40* 41* 42*	(OT19)/HSO (OT20)SPCK (OT21)SPDA (OT22)COFS	/HSO SPCK SPDA COFS	Output Output Output Output	CD control output pins. • /HSO: Playback speed mode output. High = normal speed; Low = double speed. • SPCK: Processor status signal readout clock output (176.4kHz) • SPDA: Processor status signal output. • COFS: Correction system frame clock output (7.35kHz) These pins can be switched for output ports by a program.
43*	DOUT	DOUT	Input/Output	Digital output pin.
44*	SBSY	SBSY	Input/Output	Subcode block sync output pin. It outputs a high at the S1 position when subcode sync is detected.
45*	SBOK	SBOK	Input/Output	Subcode Q data CRCC determination result output pin. It outputs a high when CRCC check is found OK.
46 47	VDD VSS	VDD1 VSS1	Input/Output Input/Output	CD unit's digital block power supply pins. Normally, apply 5V to VDD. When not using a CD (CD off), this power supply can be turned off, with only the controller power supply kept active, so that the contrller alone is operating. In this case, the CD off bit must be set to 1. When this bit is set to 1, pins 11 through 18 and pins 39 through 42 all are changed for output ports if they have been set for CD control signal input/output pins.
48	P2VREF	P2VREF	Input/Output	PLL block-2 VREF pin.
49	PDO	PDO	Input/Output	This pin outputs a phase error between EFM and PLCK signals.
50	TMAX	TMAX	Input/Output	TMAX detection result output pin. Selected by command bit TMPS. Longer than preset period: Outputs P2VREF. Shorter than preset period: Low level (Vss). Within preset period: High impedance.
51	LPFN	LPFN	Input/Output	Inverted input of low-pass filter amp.
52	LPFO	LPFO	Input/Output	Output of low-pass filter amp.
53	PVREF	PVREF	Input/Output	PLL block VREF pin.
54	VCOF	VCOF	Input/Output	VCO filter pin.
55	AVSS	AVSS	Input/Output	Analog block ground pin.
56	SLCO	SLCO	Input/Output	DAC output pin for data slice level generation.
57	RFI	RFI	Input/Output	RF signal input pin.
58	AVDD	AVDD	Input/Output	Analog block power supply pin.
59	RFCT	RFCT	Input/Output	RFRP signal center level input pin.
60	RFZI	RFZI	Input/Output	RFRP zero-cross input pin.
61	RFRP	RFRP	Input/Output	RF ripple signal input pin.
62	FEI	FEI	Input/Output	Focus error signal input pin.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

QT-CD210/C

IC802 VHiTC9457F0-1: Servo/Signal Control (TC9457F0) (3/4)

Pin No.	Port Name	Terminal Name	Input/Output	Function
63	SBAD	SBAD	Input/Output	Subbeam add signal input pin.
64	TEI	TEI	Input/Output	Tracking error input pin. This input is read when tracking servo is on.
65	TEZI	TEZI	Input/Output	Tracking error zero-cross input pin.
66	FOO	FOO	Input/Output	Focus equalizer output pin.
67	TRO	TRO	Input/Output	Tracking equalizer output pin.
68	VREF	VREF	Input/Output	Analog reference power supply pin.
69	RFGC	RFGC	Input/Output	RF amplitude adjusting control signal output pin. It outputs 3-level PWM signals. (PWM carrier = 88.2kHz)
70	TEBC	TEBC	Input/Output	Tracking balance control signal output pin. It outputs 3-level PWM signals. (PWM carrier = 88.2kHz)
71	FMO	FMO	Input/Output	Focus equalizer output pin. It outputs 3-level PWM signals. (PWM carrier = 88.2kHz)
72	DMO	DMO	Input/Output	Disc equalizer output pin. It outputs 3-level PWM signals. (PWM carrier = DSP block 88.2kHz, synchronized to PXO)
73	2VREF	2VREF	Input/Output	Analog reference power supply pin. (2 x VREF)
74	SEL	SEL	Input/Output	APC circuit on/off signal output pin. When laser is on, this pin goes to a high-impedance state when UHS = low and outputs a high when UHS = high
75 76	VDD VDD	VDD2 VSS2	Input/Output Input/Output	CD unit's digital block power supply pins. Normally, apply 5V to VDD. When not using a CD (CD off), this power supply can be turned off, with only the controller power supply kept active, so that the contrller alone is operating. In this case, the CD off bit must be set to 1. When this bit is set to 1, pins 11 through 18 and pins 39 through 42 all are changed for output ports if they have been set for CD control signal input/output pins.
77	XVSS	XVSS	Input/Output	CD's crystal oscillator power supply pins. Normally, connect these pins to the power supply lines that are used in common for the VDD and VSS pins.
78 79	XI XO	XI XO	Input/Output Input/Output	CD's crystal oscillator input/output pins. Normally, connect 16.934MHz here. This clock is used as the system clock for the CD. After a system reset, it also is used as the system clock on the controller side.
80	XVDD	XVDD	Input/Output	CD's crystal oscillator input/output pins. Normally, connect these pins to the power supply lines that are used in common for the VDD and VSS pins.
81	DVSR	DVSR	Input/Output	R-channel D/A converter unit ground pin.
82	RO	RO	Input/Output	R-channel data forward output pin.
83	DVRR	DVRR	Input/Output	R-channel reference voltage pin.
84	DVDD	DVDD	Input/Output	D/A converter unit power supply pin.
85	DVRL	DVRL	Input/Output	L-channel reference voltage pin.
86	LO	LO	Input/Output	L-channel data forward output pin.
87	DVSL	DVSL	Input/Output	L-channel D/A converter unit ground pin.
88 89*	NC NC/VPP	NC NC	Input/Output Input/Output	NC pins. Normally, connect these pins to ground or leave them open.
90	/RST	RESET	Input	Device's system reset signal input pin. The device remains reset while $\overline{\text{RESET}}$ is held low and when $\overline{\text{RESET}}$ is released back high, the CD unit becomes operational and the program starts from address 0. Normally, a system reset is asserted when a voltage of 2.7V or more is applied to VDD when it is at 0V (power-on reset). Therefore, this pin must be pulled high when used for this purpose.

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

IC802 VHiTC9457F0-1: Servo/Signal Control (TC9457F0) (4/4)

Pin No.	Port Name	Terminal Name	Input/Output	Function
91	/HOLD	RYNCREC	Input	<p>This pin is used to input a signal that requests or clears the hold mode. Normally, use this pin for CD mode select signal input or battery detection signal input.</p> <p>There are two hold modes: clock stop mode (crystal oscillator turned off) and a wait mode (CPU stopped). These modes are entered by executing the CKSTP and WAIT instructions, respectively.</p> <p>The clock stop mode can be requested by a programmed input: low level detection on $\overline{\text{HOLD}}$ pin or forced execution, and can be cleared by detecting a high on the $\overline{\text{HOLD}}$ pin or a change of state in its input signal. When the CKSTP instruction is executed, the clock generator and the CPU stop operating and the device is placed in a memory backup state. During this state, the device's current consumption is reduced to 1μA or less. At the same time, the display output and CMOS output ports are automatically set low, and the Nch open-drain outputs are turned off. The wait mode is executed regardless of the input state on the $\overline{\text{HOLD}}$ pin, with the device's current consumption reduced.</p> <p>This mode is cleared by a change of state in the $\overline{\text{HOLD}}$ input.</p>
92	INTR	REMO-IN	Input	<p>External interrupt input pin.</p> <p>When the interrupt facility is enabled and a pulse of 1.11 to 2.22μs in duration is applied to this pin, an interrupt is generated and the program jumps to address 1. Input logic and the active edge (rise or fall) can be selected for each interrupt input.</p> <p>Also, the internal 8-bit time clock can be chosen for this interrupt input, in which case it is possible to count pulses or generate an interrupt at a given pulse count (address 3).</p>
93* 94*	MXO MXI	MXO MXI	— —	<p>Crystal oscillator pins for the controller.</p> <p>The oscillator clock is used as the timebase for the clock facility or as the controller's system clock. Connect a 4.5MHz or 75kHz crystal resonator to the MXO and MXI pins. Since these pins do not contain internal feedback resistors, etc, an amp resistor or output resistor must be added external to the chip.</p> <p>When using the clock generated by the CD unit's crystal oscillator for clocking the entire device operation, fix the MXI pin to the GND level. Oscillation is stopped by executing a CKSTP instruction.</p> <p>Select the crystal oscillator and control its operation by a program.</p>
95 96	MVSS MVDD	MVSS MVDD	— —	<p>Power supply pins.</p> <p>Normally, apply a voltage of 4.5 to 5.5V to VDD.</p> <p>In a backup state (when the CKSTP instruction executed), the device's current consumption is reduced to 1μA or less, allowing for the supply voltage to be lowered to 2.0V.</p> <p>The device is reset and the program starts from address 0 when a voltage of 2.7V or more is applied to this pin when it is at 0V (power-on reset).</p>
97 98 99 100	OT1 OT2 OT3 OT4	COM1 COM2 COM3 COM4	Output Output Output Output	<p>Common signal outputs to the LCD panel.</p> <p>Up to 72 segments in a matrix with S1 to S18 can be displayed.</p> <p>Three voltage levels MVDD, VEE (1/2 MVDD), and GND are output for 83Hz period at 2ms intervals.</p> <p>After a system reset and after deassertion of a clock stop instruction, the VEE voltage is output and the DISP OFF bit is set to 0 before common signals are output.</p>

In this unit, the terminal with asterisk mark (*) is (open) terminal which is not connected to the outside.

QT-CD210/C

— M E M O —

SHARP PARTS GUIDE

MODEL **QT-CD210(BL)**
 QT-CD210(S)
 QT-CD210(WH)
 QT-CD210C(S)

“HOW TO ORDER REPLACEMENT PARTS”

To have your order filled promptly and correctly, please furnish the following information.

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4. DESCRIPTION

★ MARK: SPARE PARTS-DELIVERY SECTION

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Explanation of capacitors/resistors parts codes

Capacitors

VCC Ceramic type
VCK Ceramic type
VCT Semiconductor type
VC •• MF Cylindrical type (without lead wire)
VC •• MN Cylindrical type (without lead wire)
VC •• TV Square type (without lead wire)
VC •• TQ Square type (without lead wire)
VC •• CY Square type (without lead wire)
VC •• CZ Square type (without lead wire)
VC J .. The 13th character represents capacity difference.
 ("J" ±5%, "K" ±10%, "M" ±20%, "N" ±30%,
 "C" ±0.25 pF, "D" ±0.5 pF, "Z" +80-20%.)

If there are no indications for the electrolytic capacitors, error is ±20%.

Resistors

VRD Carbon-film type
VRS Carbon-film type
VRN Metal-film type
VR •• MF Cylindrical type (without lead wire)
VR •• MN Cylindrical type (without lead wire)
VR •• TV Square type (without lead wire)
VR •• TQ Square type (without lead wire)
VR •• CY Square type (without lead wire)
VR •• CZ Square type (without lead wire)
VR J .. The 13th character represents error.
 ("J" ±5%, "F" ±1%, "D" ±0.5%.)

If there are no indications for other parts, the resistors are ±5% carbon-film type.

NOTE:

Parts marked with “⚠” are important for maintaining the safety of the set.
Be sure to replace parts with specified ones for maintaining the safety and performance of the set.

QT-CD210/C

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
INTEGRATED CIRCUITS				
IC1	VHITA2111N/-1	J	AN	FM/AM IF MPX.,TA2111N
IC101	VHIBA3311L/-1	J	AK	REC./P.B.Equalizer Amp., BA3311L
IC201	VHITA8227P/-1	J	AH	Power Amp.,TA8227P
IC801	VHITA2109F/-1	J	AL	Servo Pre Amp.,TA2109F
IC802	VHITC9457F0-1	J	AZ	Servo/Signal Control,TC9457F0
IC803	VHILA6541D/-1	J	AW	Focus/Tracking/Spin/Sled Driver, LA6541D
TRANSISTORS				
Q204	VSKTA1046Y/-1	J	AC	Sillicon,PNP,KTA1046 Y
Q205	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q351	VSKTC3199GR-1	J	AB	Silicon,NPN,KTC3199 GR
Q801	VSKTA1266GR-1	J	AB	Silicon,PNP,KTA1266 GR
Q802	VSKTA1273Y/-1	J	AE	Silicon,PNP,KTA1273 Y
Q803	VSKRC107M/-1	J	AC	Digital,NPN,KRC107 M
DIODES				
D1,2	VHD1N4148//-1	J	AA	Silicon,1N4148
D101,102	VHD1N4148//-1	J	AA	Silicon,1N4148
D201~203	VHD1N4148//-1	J	AA	Silicon,1N4148
D651~654	VHD1N4004//-1	J	AB	Silicon,1N4004
D801	VHD1N4004//-1	J	AB	Silicon,1N4004
ZD201	VHEDZ5R1BSB-1	J	AC	Zener,5.1V,DZ5.1BSB
FILTERS				
CF1	RFILF0001SJZZ	J	AD	FM IF,10.7 MHz
CF3	RFILA0001SJZZ	J	AD	AM IF,460 kHz
F1	RFILR0001SJZZ	J	AD	FM Band Pass Filter
TRANSFORMERS				
T2	RCILIO006SJZZ	J	AC	FM Detection
T3	RCILIO007SJZZ	J	AC	AM IF
△ T651	RTRNP0036SJZZ	J	AQ	Power
COILS				
COR1	RCORF0005SJZZ	J	AB	Core
L1	RCILR0001SJZZ	J	AB	FM RF
L2	RCILB0004SJZZ	J	AD	FM Oscillation
L3	RCILA0001SJZZ	J	AD	AM Bar Antenna
L4	RCILB0002SJZZ	J	AC	AM Oscillation
L301	RCILB0003SJZZ	J	AD	Bias Oscillation
L801	VP-DHR82K0000	J	AE	0.82 μH,Choke
VARIABLE RESISTOR				
VR201	RVR-B0001SJZZ	J	AE	20 kohms (B),Semi-VR [Volume]
VARIABLE CAPACITORS				
VC1~4	RVC-R0001SJZZ	J	AK	Variable Capacitor with Trimmer (TC1~4)
VIBRATOR				
X801	RCRM-0002SJZZ	J	AE	Ceramic,16.93 MHz
CAPACITORS				
C1	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C2	VCCCPA1HH180J	J	AA	18 pF (CH),50V
C3	VCCUPA1HJ220J	J	AA	22 pF (UJ),50V
C4	VCCCPA1HH4R0C	J	AA	4 pF (CH),50V
C6	VCKYPA1HB331K	J	AA	330 pF,50V
C7	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C8,9	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C10	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C11	RC-GZA474AF1H	J	AA	0.47 μF,50V,Electrolytic
C12	RC-GZA475AF1H	J	AB	4.7 μF,50V,Electrolytic
C13	RC-GZA227AF1A	J	AB	220 μF,10V,Electrolytic
C14	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C15	VCCCPA1HH100J	J	AA	10 pF (CH),50V
C16,17	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C18,19	VCQYKA1HM153K	J	AB	0.015 μF,50V,Mylar
C20	VCKYPA1HF473Z	J	AB	0.047 μF,50V

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
C21	VCCCPA1HH2R0C	J	AA	2 pF (CH),50V
C22	RC-GZA104AF1H	J	AB	0.1 μF,50V,Electrolytic
C105,106	VCKYPA1HB272K	J	AA	0.0027 μF,50V
C107,108	VCKYPA1HB821K	J	AA	820 pF,50V
C109,110	VCKYPA1HB271K	J	AA	270 pF,50V
C111,112	VCKYPA1HB331K	J	AA	330 pF,50V
C113,114	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C115,116	VCQYKA1HM183K	J	AB	0.018 μF,50V,Mylar
C117,118	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C119	RC-GZA225AF1H	J	AB	2.2 μF,50V,Electrolytic
C120	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C121,122	VCKYPA1HF103Z	J	AB	0.01 μF,16V
C123	RC-GZA227AF1A	J	AB	220 μF,10V,Electrolytic
C202	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C203	VCKYPA1HF103Z	J	AB	0.01 μF,16V
C204	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C215,216	VCQYKA1HM104K	J	AB	0.1 μF,50V,Mylar
C217,218	VCKYPA1HB152K	J	AA	0.0015 μF,50V
C219,220	RC-GZA105AF1H	J	AB	1 μF,50V,Electrolytic
C221,222	VCKYPA1HB102K	J	AA	0.001 μF,50V
C225	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C226	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C227	RC-GZW338AF1C	J	AF	3300 μF,16V,Electrolytic
C233,234	RC-GZA477AF1A	J	AC	470 μF,10V,Electrolytic
C235~238	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C239,240	VCQYKA1HM104K	J	AB	0.1 μF,50V,Mylar
C241	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C351	VCQYKA1HM222K	J	AA	0.0022 μF,50V,Mylar
C352	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C353	VCQYKA1HM562K	J	AA	0.0056 μF,50V,Mylar
C354	VCQYKA1HM223K	J	AB	0.022 μF,50V,Mylar
C651~654	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C801	VCKYPA1HF103Z	J	AB	0.01 μF,16V
C802	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C804	VCCCPA1HH2R0C	J	AA	2 pF (CH),50V
C805	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C806	RC-GZA337AF1C	J	AC	330 μF,16V,Electrolytic
C807	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C813	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C814	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C815	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C816	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C817	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C818	VCCSPA1HL560J	J	AA	56 pF,50V
C819,820	VCQYKA1HM104K	J	AB	0.1 μF,50V,Mylar
C821	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C822	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C823,824	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C825	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C826	VCCSPA1HL470J	J	AA	47 pF,50V
C827	VCQYKA1HM153K	J	AB	0.015 μF,50V,Mylar
C828	VCKYPA1HB272K	J	AA	0.0027 μF,50V
C829	VCKYPA1HB472K	J	AB	0.0047 μF,50V
C830	VCQYKA1HM103K	J	AA	0.01 μF,50V,Mylar
C832	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C833	VCQYKA1HM333K	J	AB	0.033 μF,50V,Mylar
C834,835	VCKYPA1HB471K	J	AA	470 pF,50V
C836~839	VCQYKA1HM473K	J	AB	0.047 μF,50V,Mylar
C840~842	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C843	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
C844	RC-GZA107AF1A	J	AB	100 μF,10V,Electrolytic
C845	VCKYPA1HF473Z	J	AB	0.047 μF,50V
C846	RC-GZA106AF1C	J	AB	10 μF,16V,Electrolytic
C847,848	RC-GZA226AF1C	J	AB	22 μF,16V,Electrolytic
C849,850	VCKYPA1HB222K	J	AA	0.0022 μF,50V
C851,852	RC-GZA335AF1H	J	AB	3.3 μF,50V,Electrolytic
C853	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C854	VCKYPA1HB682K	J	AB	0.0068 μF,50V
C855	VCKYPA1HF223Z	J	AB	0.022 μF,50V
C856	VCKYPA1HB102K	J	AA	0.001 μF,50V
C863	RC-GZA476AF1C	J	AB	47 μF,16V,Electrolytic
RESISTORS				
R1	VRD-ST2CD331J	J	AA	330 ohms,1/6W
R2	VRD-ST2CD272J	J	AA	2.7 kohms,1/6W
R3	VRD-ST2CD224J	J	AA	220 kohms,1/6W
R4	VRD-ST2CD222J	J	AA	2.2 kohms,1/6W
R5	VRD-ST2CD332J	J	AA	3.3 kohms,1/6W
R6	VRD-ST2CD101J	J	AA	100 ohm,1/6W
R7	VRD-ST2CD121J	J	AA	120 ohms,1/6W
R8,9	VRD-ST2CD103J	J	AA	10 kohm,1/6W

QT-CD210/C

NO.	PARTS CODE	★ PRICE RANK	DESCRIPTION
R10,11	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R101,102	VRD-ST2CD151J	J AA	150 ohms, 1/6W
R103,104	VRD-ST2CD123J	J AA	12 kohms, 1/6W
R105,106	VRD-ST2CD103J	J AA	10 kohm, 1/6W
R107,108	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R109,110	VRD-ST2CD121J	J AA	120 ohms, 1/6W
R113,114	VRD-ST2CD822J	J AA	8.2 kohms, 1/6W
R115~118	VRD-ST2CD392J	J AA	3.9 kohms, 1/6W
R119,120	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R121,122	VRD-ST2CD182J	J AA	1.8 kohms, 1/6W
R123,124	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R125	VRD-ST2CD684J	J AA	680 kohms, 1/6W
R126	VRD-ST2CD101J	J AA	100 ohm, 1/6W
R201	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R202	VRD-ST2CD472J	J AA	4.7 kohms, 1/6W
R203	VRD-ST2CD561J	J AA	560 ohms, 1/6W
R215,216	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R219,220	VRD-ST2CD272J	J AA	2.7 kohms, 1/6W
R221,222	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R230	VRD-ST2EE2R7J	J AA	2.7 ohms, 1/4W
R231,232	VRD-ST2CD121J	J AA	120 ohms, 1/6W
R351	VRD-ST2CD101J	J AA	100 ohm, 1/6W
R352	VRD-ST2CD151J	J AA	150 ohms, 1/6W
R353	VRD-ST2CD333J	J AA	33 kohms, 1/6W
R354	VRD-ST2CD4R7J	J AA	4.7 ohms, 1/6W
R455,456	VRD-ST2CD153J	J AA	15 kohms, 1/6W
R457,458	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R801	VRD-ST2EE220J	J AA	22 ohms, 1/4W
R802	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R803	VRD-ST2CD823J	J AA	82 kohms, 1/6W
R804	VRD-ST2CD683J	J AA	68 kohms, 1/6W
R805	VRD-ST2CD393J	J AA	39 kohms, 1/6W
R806	VRD-ST2CD272J	J AA	2.7 kohms, 1/6W
R807	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R811	VRD-ST2CD223J	J AA	22 kohms, 1/6W
R812	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R820	VRD-ST2CD473J	J AA	47 kohms, 1/6W
R821	VRD-ST2CD223J	J AA	22 kohms, 1/6W
R824	VRD-ST2CD103J	J AA	10 kohm, 1/6W
R826	VRD-ST2CD224J	J AA	220 kohms, 1/6W
R827	VRD-ST2CD153J	J AA	15 kohms, 1/6W
R828	VRD-ST2CD103J	J AA	10 kohm, 1/6W
R829	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R830	VRD-ST2CD103J	J AA	10 kohm, 1/6W
R831~834	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R835,836	VRD-ST2CD271J	J AA	270 ohms, 1/6W
R837,838	VRD-ST2CD103J	J AA	10 kohm, 1/6W
R839	VRD-ST2CD473J	J AA	47 kohms, 1/6W
R840	VRD-ST2EE100J	J AA	10 ohm, 1/4W
R843,844	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R846	VRD-ST2CD331J	J AA	330 ohms, 1/6W
R847	VRD-ST2CD102J	J AA	1 kohm, 1/6W
R848	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R849	VRD-ST2CD682J	J AA	6.8 kohms, 1/6W
R850	VRD-ST2CD152J	J AA	1.5 kohms, 1/6W
R851~853	VRD-ST2CD222J	J AA	2.2 kohms, 1/6W
R860	VRD-ST2CD101J	J AA	100 ohm, 1/6W
R861	VRD-ST2CD332J	J AA	3.3 kohms, 1/6W
R862	VRD-ST2CD223J	J AA	22 kohms, 1/6W

OTHER CIRCUITRY PARTS

BI801/CNS801	QCNCWN0158SJZZ	J AF	Connector Ass'y, 8/8Pin
BI802/CNS802	QCNCWN0159SJZZ	J AD	Connector Ass'y, 5/5Pin
BI803/CNS803	QCNCWN0115SJZZ	J AE	Connector Ass'y, 6/6Pin
CNP101	QCNCW001DSJZZ	J AC	Plug, 4Pin
CNP201	QCNCW001CSJZZ	J AC	Plug, 3Pin
CNP602	QCNCW002BSJZZ	J AC	Plug, 2Pin
CNP803	QCNCM932FAFZZ	J AC	Plug, 6Pin
CNS101	QCNCWN0010SJZZ	J AG	Connector Ass'y, 4Pin
CNS201	QCNCWN0157SJZZ	J AC	Connector Ass'y, 3Pin
CNS602	QCNCWN0162SJZZ	J AC	Connector Ass'y, 2Pin
FW806	QCNCWN0163SJZZ	J AD	Flat Wire, 10Pin
LCD801	RV-LX0006SJZZ	J AF	LCD Display
M601(240-6)	9GD192112346	J AX	Motor with Pulley [Tape]
M701	RMOTV0409AFM1	J AN	Motor with Gear [Sled]
M702	RMOTV0408AFM3	J AN	Motor with Chassis [Spindle]
△SO651	QSOCA0001SJZZ	J AE	AC Inlet Socket [QT-CD210/C]
△SO651	QSOCA0005SJZZ	J	AC Inlet Socket [QT-CD210C]
SP201,202	VSPA010PB014S	J AG	Speaker, Woofer
SW102	QSW-S0001SJZZ	J AD	Switch, Slide Type [Record/Playback]

NO.	PARTS CODE	★ PRICE RANK	DESCRIPTION
SW201	QSW-S0002SJZZ	J AD	Switch, Slide Type [Function Selector]
SW601(240-7)	9GD640101149	J	Switch, Leaf Type [Tape Main]
SW702	QSW-F9001AWZZ	J AE	Switch, Push Type [Pickup In]
SW801	QSW-K0001SJZZ	J AC	Switch, Key Type [Play/Pause]
SW802	QSW-K0001SJZZ	J AC	Switch, Key Type [Stop]
SW803	QSW-K0001SJZZ	J AC	Switch, Key Type [Review/Down]
SW804	QSW-K0001SJZZ	J AC	Switch, Key Type [Cue/Up]
SW810	QSW-F0001SJZZ	J AD	Switch, Leaf [CD Lid]

CD MECHANISM PARTS

301	NGERH0586AFZZ	J AC	Gear, Middle
302	NGERH0587AFZZ	J AC	Gear, Drive
303	MLEVP1054AFZZ	J AC	Rail, Guide
304	NSFTM0291AFFW	J AD	Shaft, Guide
305	PCUSG0613AFZZ	J AC	Cushion
△306	DCTRH8003SJ01	J	Pickup Unit Ass'y
701	XBSSD26P06000	J AA	Screw, ø2.6×6mm
702	XHBSD20P05000	J AA	Screw, ø2×5mm
703	XBBSD20P03000	J AA	Screw, ø2×3mm
704	LX-WZ1070AFZZ	J AA	Washer, ø1.5×ø3.8×0.25mm
M701	RMOTV0409AFM1	J AN	Motor with Gear [Sled]
M702	RMOTV0408AFM3	J AN	Motor with Chassis [Spindle]
SW702	QSW-F9001AWZZ	J AE	Switch, Push Type [Pickup In]

CABINET PARTS

201	GCABA1038SJM1	J AV	Front Cabinet
202	GCABB1038SJSJA	J AN	Top Cabinet
203	GFTAT1004SJSJA	J AF	CD Lid
204	CHLDM1001SJ01	J AG	Stabilizer Ass'y
204- 1	PMAGF0002AWZZ	J AE	Magnet
204- 2	—	—	Holder, Stabilizer (Not Replacement Item)
205	GFTAB1009SJSJA	J AC	Battery Compartment Lid
206	GFTAC1004SJSJA	J AE	Cassette Holder
208	HDECQ0027SJSJA	J AB	Decoration Plate, Dial Window
209	HPNLC1042SJSJA	J AC	Panel, Control
210	HSSND0001SJSJA	J AB	Dial Pointer
211	JBTN-0013SJSJA	J AB	Button, Pause
212	JBTN-0014SJSJA	J AB	Button, Stop/Eject
213	JBTN-0015SJSJA	J AB	Button, Fast Forward
214	JBTN-0016SJSJA	J AB	Button, Rewind
215	JBTN-0017SJSJA	J AB	Button, Play
216	JBTN-0018SJSJA	J AB	Button, Record
217	JHNDP1003SJSJA	J AE	Handle
218	JKNBK0023SJSJA	J AB	Knob, Volume
219	JKNBK0024SJSJA	J AB	Button, Function
220	JKNBZ0031SJSJA	J AD	Button, CD
221	JKNBZ0032SJSJA	J AC	Knob, Tuning
222	CGERH0001SJ01	J AF	Damper Gear Ass'y
223	LANGK0001SJFW	J AC	Bracket, Button
224	LANGZ0003SJZZ	J AE	Bracket, Battery
225	LHLDA1001SJZZ	J AC	Holder, AM Bar Antenna
226	LHLDW1001SJZZ	J AD	Nylon Band
227	RCORF0002SJZZ	J AC	Core
228	LHLDZ1021SJZZ	J	Holder, LCD
229	MSPRC0004SJFN	J	Spring, Battery, -
230	MSPRC0005SJFD	J AB	Spring, Battery, +/-
231	MSPRD0002SJFD	J AC	Spring, CD Lid
232	MSPRD0009SJFD	J AB	Spring, Cassette Holder Up
233	MSPRZ0002SJFD	J AB	Spring, Rod Antenna
234	NDRM-0003SJZZ	J AB	Drum
235	PGUMS0001SJZZ	J AB	Cushion, CD Lid
236	PSLDM3003SJFW	J	Bracket, Shield
237	QANTR0003SJZZ	J AL	Rod Antenna
238	MSPRP0002SJFW	J AC	Bracket, Record
240	CMECB0003SJ01	J AZ	Tape Mechanism Ass'y
240- 1	9GD192104309	J AR	Pinch Roller Arm Ass'y
240- 2	9GD19210703	J AE	Belt, REW/FF
240- 3	9GD19210938	J	Belt, Main
240- 4	9GD62140116	J AT	Head, Record/Playback
240- 5	9GD62071008	J AQ	Head, Erase
240- 5	9GD62091010	J AM	Head, Erase
240- 6(M601)	9GD192112346	J AX	Motor with Pulley [Tape]
240- 7(SW601)	9GD640101149	J	Switch, Leaf Type [Tape Main]
601	XBBSD25P06000	J AB	Screw, ø2.5×6mm
602	XUBSD25P10000	J AB	Screw, ø2.5×10mm
603	XUBSD30P08000	J AA	Screw, ø3×8mm
604	XUBSD30P10000	J AA	Screw, ø3×10mm
605	XUBSD30P12000	J AA	Screw, ø3×12mm

QT-CD210/C

NO.	PARTS CODE	★	PRICE RANK	DESCRIPTION
606	XUPSD25P08000	J	AB	Screw,ø2.5×8mm
607	XWHSD28-08120	J	AB	Washer,ø2.8×ø12×0.8mm
608	XWSSJ26-06000	J	AA	Washer,ø2.7×ø5.3×0.6mm
610	XHPSD20P03000	J	AA	Screw,ø2×3mm

PACKING PARTS (For Canada/Central America)

SPAKA0036SJZZ	J			Packing Add.,Left/Right
SPAKC0091SJZZ	J			Packing Case
SPAKZ0013SJZZ	J			Top Pad,Packing Case
SPAKZ0014SJZZ	J			Polyethylene Sheet,Unit
SSAKH0001SJZZ	J	AC		Polyethylene Bag,Unit
SSAKK0002SJZZ	J	AC		Polyethylene Bag, AC Power Supply Cord
TLABR1082SJZZ	J	AB		Label,Bar Code,Packing Case
TLABZ0015SJZZ	J	AC		Label,VJ No.,Packing Case

ACCESSORIES

△	QACCD0006AW00	J	AP	AC Power Supply Cord [For QT-CD210C]
△	QACCU0001SJ00	J	AR	AC Power Supply Cord [For QT-CD210]
	TINSE0031SJZZ	J	AC	Operation Manual [For QT-CD210]
	TINSK0023SJZZ	J		Operation Manual [For QT-CD210C]
	TLABZ0041SJZZ	J	AH	Label,Feature

P.W.B. ASSEMBLY (Not Replacement Item)

PWB-A1~4	DCEK-0007SJ03	J	—	Main/CD Control/Power/Washer (Combined Ass'y)
PWB-B	QPWBF3895AFZZ	J	AC	CD Motor (PWB Only)

OTHER SERVICE PART

UDSKA0004AFZZ	J	AZ		CD Pickup Lens Cleaner
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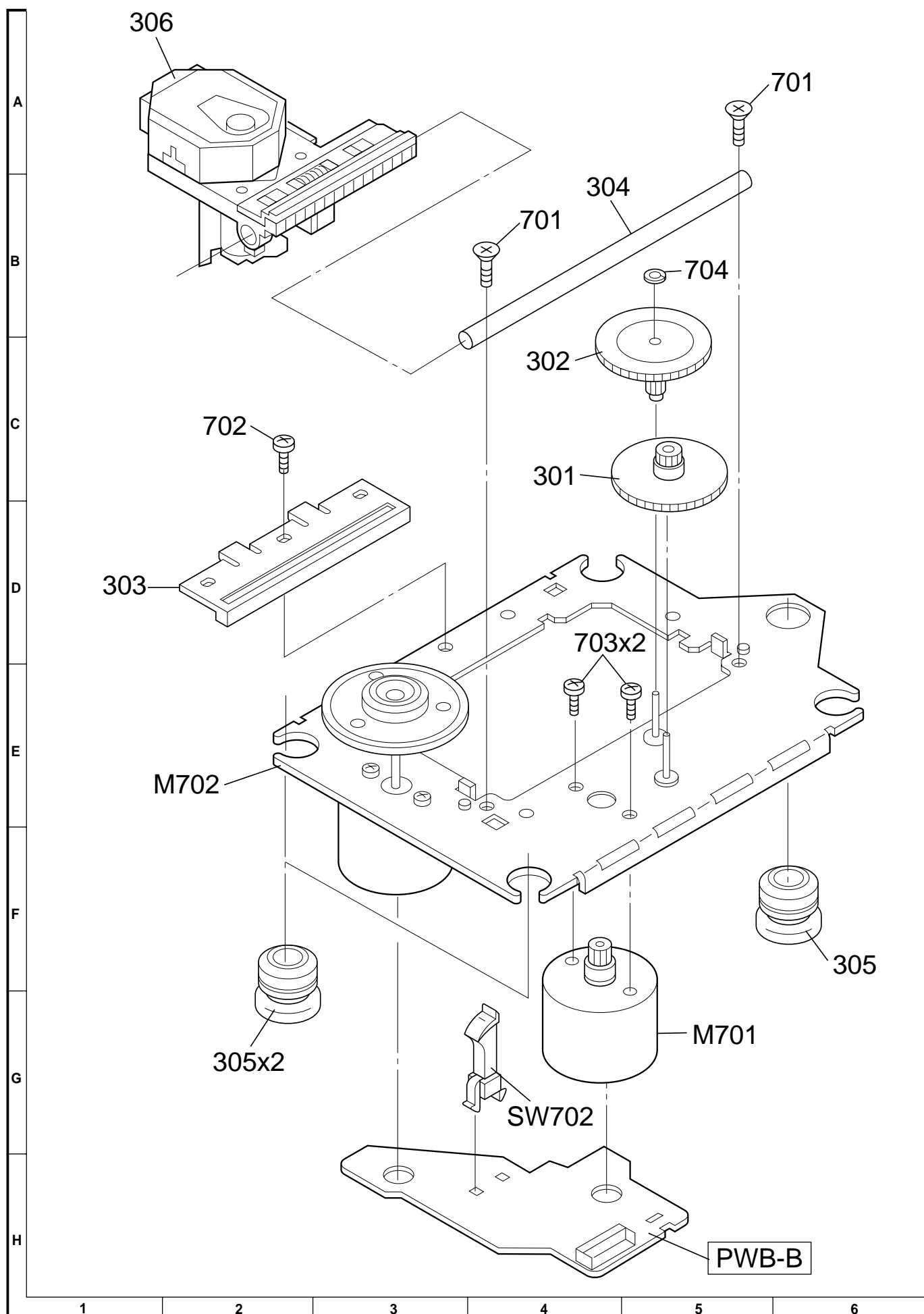


Figure 4 CD MECHANISM EXPLODED VIEW

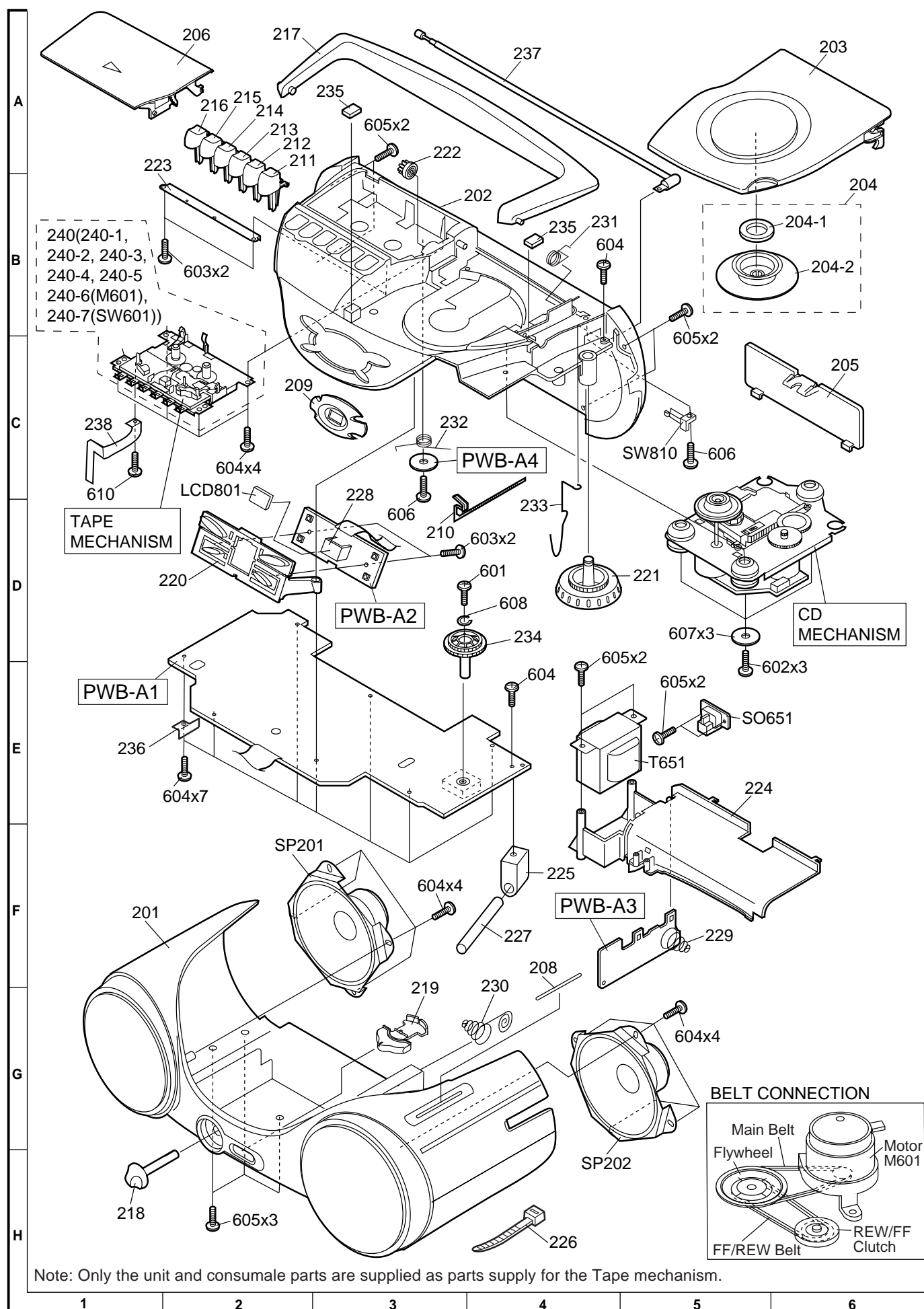
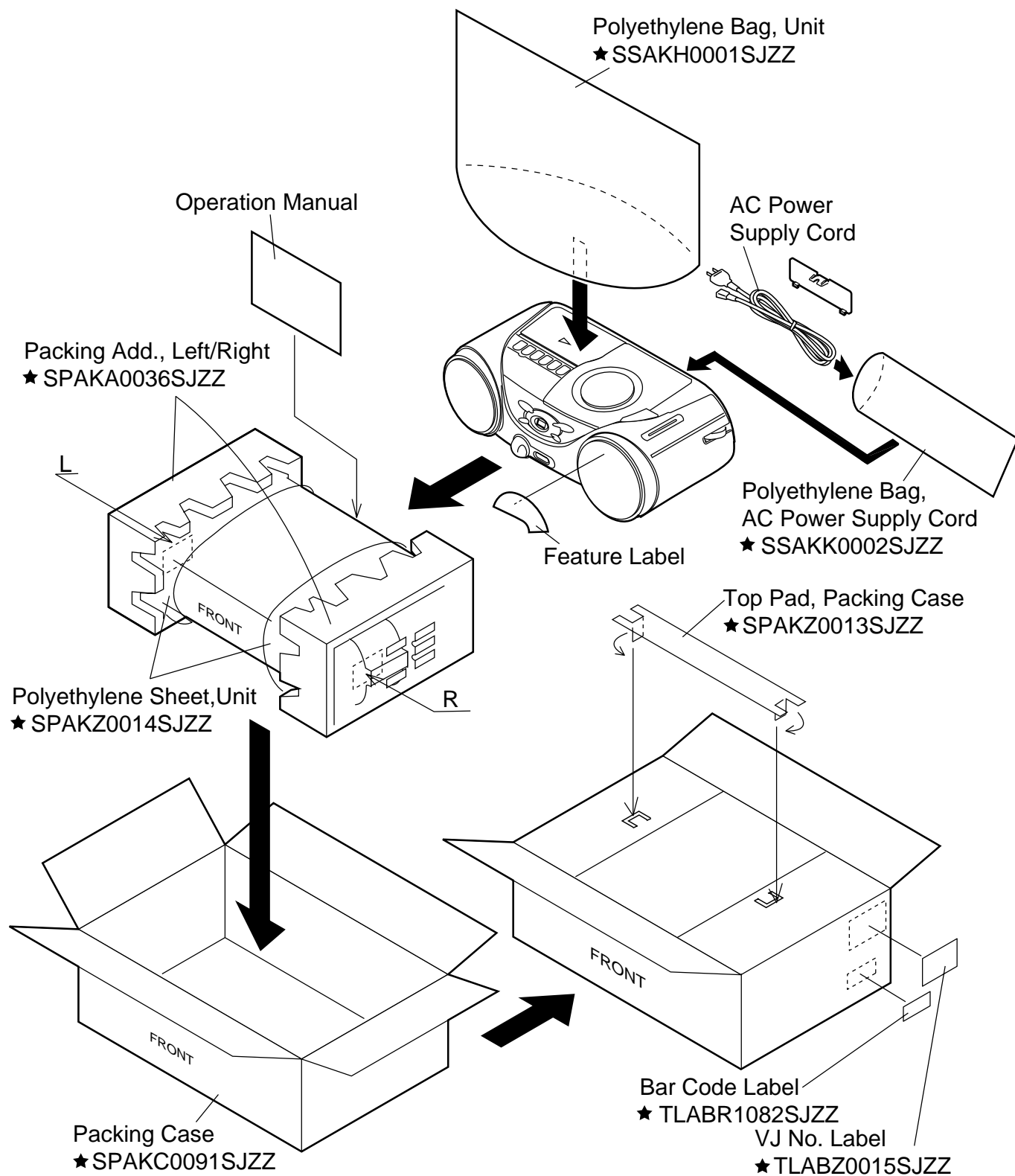


Figure 5 CABINET EXPLODED VIEW

PACKING OF THE SET (FOR QT-CD210 ONLY)

- Setting position of switches and knobs

Tape Mechanism Control	STOP STATE
TUNING	LOW
FUNCTION SELECTOR	OFF/TAPE
VOLUME	LOW



★ : Not Replacement Item

QT-CD210/C

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— M E M O —

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